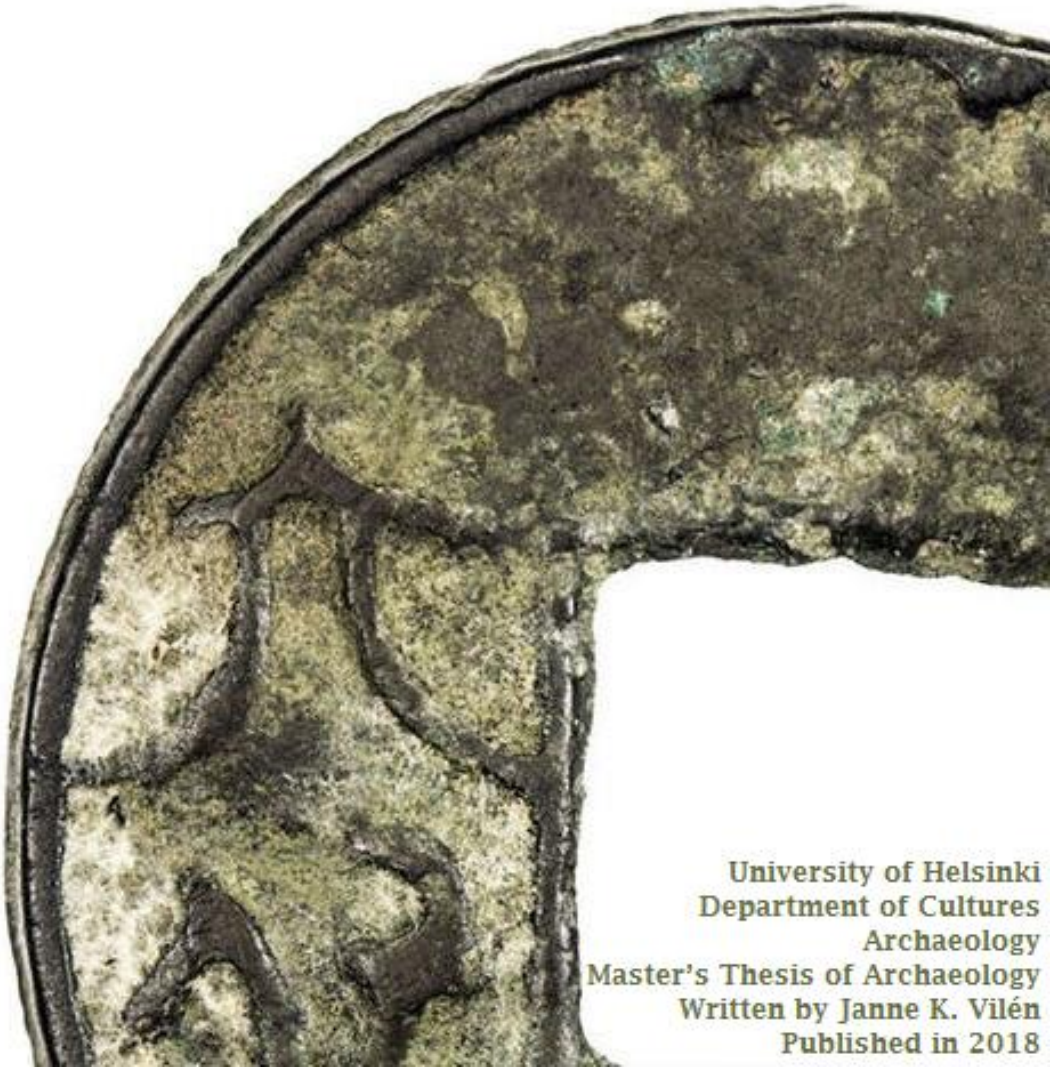
The Warring States and Monetizing Economies

An Analogical Research on the Causal Relationships between Geopolitics, Economics, and the Emergence of the Round Coinage of China



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Tiivistelmä

”The Warring States and Monetizing Economies: An Analogical Research on the Causal Relationships between Geopolitics, Economics, and the Emergence of the Round Coinage of China” on Helsingin yliopiston arkeologian oppiaineen pro gradu –tutkielma. Se on kirjoitettu englannin kielellä. Pro gradussa tutkitaan syitä sille, miksi Kiinassa otettiin Itäisen Zhou-dynastian aikana (770 - n. 256 eaa.) käyttöön pyöreät pronssikolikot toisenlaisten rahamuotojen rinnalle. Tuolloin Kiina koostui vielä useasta itsenäisestä valtiosta, jotka olivat jatkuvissa sodissa toisiaan vastaan. Pro gradussa osoitetaan pyöreiden kolikoiden pääfunktion olleen näiden valtioiden kansalaisten harjoittaman päivittäis- ja paikallistason kaupankäynnin helpottaminen, jolla on ollut suuri merkitys paikallisyhteisöjen vaurauden ja omavaraisuuden ylläpitämisessä. Tällä on puolestaan ollut merkittävä rooli kansalaisilta kerättyjen verovarojen määrän maksimoinnissa. Verovaroilla oli puolestaan hyvin merkittävä rooli valtioiden armeijoiden ylläpidossa, joiden olemassaoloon valtioiden selviytyminen nojautui.

Pyöreiden kolikoiden suuri merkitys Itäisen Zhou-dynastian valtioiden paikallis- ja valtiotason ekonomiassa osoitetaan lähestymällä aihetta kolmen eri **tutkimuskeinon** avulla. Näistä **ensimmäisenä** käsiteltävä koskee aikakaudella käytettyjen pronssirahatyyppien fyysisiä eroja. Näiden perusteella esitetään kolikkotyyppisten pronssirahojen olleen muita aikakaudella tyypillisesti käytössä olleita pronssirahatyyppejä pienempiä ja kevyempiä. Tämän lisäksi havainnoidaan, että kolikot ovat yleensä olleet kierrossa vain niitä valmistaneen valtion sisällä. Otettaessa huomioon toisenlaisten pronssirahojen suurempi koko ja paino sekä niiden kansainvälinen levinneisyysalue, on pääteltävissä toisenlaisten rahamuotojen ja kolikoiden käyttötarkoitusten olleen toisistaan eroavaisia. Näiden havaintojen perusteella päätellään kolikoiden käyttöönoton liittyvän eritoten paikallistalouden funktioiden sujuvuuden sekä paikallisyhteisöjen vaurauden pönkittämiseen. **Toisena** käytettävä tutkimuskeino käsittelee syitä sille, miksi pronssikolikoiden käyttöönotto ajoittui nimenomaan Itäisen Zhou-dynastian sotaisalle loppupuoliskolle, joka tunnetaan nimellä Taistelevien läänitysvaltioiden kausi (475 - 221 eaa.). Tuolloin niin valtioiden armeijoiden koko kuin niiden tarpeellisuuskin kasvoivat entisestään. Gradussa osoitetaan tällä olevan yhteys kolikoiden käyttöönottoon. Tämä perustellaan sillä, että kolikoilla oli suuri merkitys paikallistason talouden ja sitä harjoittaneen yhteisön vaurauden kasvattamisessa, jolla oli puolestaan huomattava merkitys kansalaisilta kerättyjen verovarojen määrän maksimoinnissa. Verovarat olivat puolestaan valtion selviytymisen kannalta erittäin tärkeitä, sillä niistä huomattava osa käytettiin armeijoiden ylläpitoon. Oheista tutkimuskysymystä lähestytään historiallisten lähteiden, modernin tutkimuskirjallisuuden sekä arkeologisten tutkimusaineistojen avulla. **Kolmantena** tutkimuskeinona käytetään analogiaa, jonka avulla tutkitaan Taistelevien läänitysvaltioiden kauden ja Ming-dynastian (1368 - 1644) välisiä samankaltaisuuksia. Analogia toteutetaan vertaamalla Taistelevien läänitysvaltioiden kauden rahataloudellisia osatekijöitä Ming-dynastian aikana tapahtuneisiin radikaaleihin talousuudistuksiin ja monetisaatioon. Aihetta lähestytään myös vertaamalla toisiinsa edellä mainittujen aikakausien aikana elettyjä sosiaalipoliittisia ja geopoliittisia osatekijöitä sekä näissä tapahtuneita muutoksia rahatalousuudistusten rinnalla. Kyseinen tutkimusmetodi mahdollistaa Taistelevien läänitysvaltioiden kauden aikana tapahtuneen pronssikolikoiden käyttöönoton taustalla vaikuttaneiden syiden sekä näihin liittyvien yhteiskunnallisten muutosten monitasoisen tarkastelun. Tätä päämäärää olisi vaikea saavuttaa muunlaisin tutkimusmetodein.

Pro gradussa osoitetaan kolmen yllä esitellyn tutkimuskeinon avulla, että pronssikolikot otettiin käyttöön Taistelevien läänitysvaltioiden kauden aikana nimenomaan paikallistasolla käydyn kaupankäynnin välineeksi. Samalla osoitetaan, että tämä oli välttämätöntä paikallisyhteisöjen vaurauden ja omavaraisuuden kasvattamiseksi, joiden ansiosta valtio kykeni puolestaan keräämään suurempia verovaroja armeijoitaan varten. Koska armeija oli valtion selviytymisen kannalta elinehto, oli äsken mainituilla taloudellisilla osatekijöillä valtavan suuri rooli Itäisen Zhou-dynastian ja etenkin Taistelevien läänitysvaltioiden kauden aikaisessa raha-, sosiaali- ja geopoliittisessa päätöksenteossa. Eräs tärkeimmistä tällaisista päätöksistä oli pyöreän kolikon käyttöönotto, joka tapahtui osana Itäisen Zhou-dynastian aikana alkanutta ja räjähdysmäisesti levinnyttä monetisaatiota.

Abstract

”The Warring States and Monetizing Economies: An Analogical Research on the Causal Relationships between Geopolitics, Economics, and the Emergence of the Round Coinage of China” is a master’s thesis of archaeology at the University of Helsinki in Finland, published in 2018. The thesis is written in English. In the thesis it is researched why the Chinese began to use round bronze coins alongside the other types of currencies during the Eastern Zhou period (770 - c. 256 B.C.). Back in those days China was still divided into multiple independent states that fought against one another on a frequent basis. The thesis shows that the primary function of the round was to facilitate the daily and local level commerce that the subjects of these states practiced. The daily and local level commerce, in its turn, had a major impact on the creation and maintenance of the economic affluence and self-sustainability of the local economies. The local economies’ economic affluence was necessary for the state, for that impacted how large amounts of tax revenues it could collect from its subjects. The tax revenues were necessary in terms of keeping up a proper army, upon which the state’s survival depended on.

The importance of the adoption of the round coinage in the implementation of the above-mentioned economic and societal factors is approached from three different **research aspects**. The **first aspect** pertains to the differences between the various types of currencies that were in use during the Eastern Zhou period. It is shown that the round bronze coins were in general smaller and lighter than the other commonly used bronze currency types. Additionally, the round coins circulated only within the borders of the state where they had been manufactured. It is stated that the larger size and weight as well as the international area of circulation of the other typical types of bronze currencies refers to that the round coins were adopted especially in order to bolster the affluence as well as to facilitate the commercial functions within the local economies. The **second aspect** relates to the inception of the Chinese round coinage. That happened during the warlike latter half of the Eastern Zhou period, known as the Warring States period (475 - 221 B.C.). It is shown that the adoption of the round coinage is closely tied to the states’ growing urgencies to gather large tax revenues to be utilized for the upkeep of the large armies. This aspect is approached by studying historical texts and modern research literature, as well as by making use of archaeological methods. The **third aspect** is an analogical study between the Warring States period and the Ming dynasty (1368 - 1644). It is performed in order to find new information pertaining to the functions of the round coinage during the Warring States period. The analogy is conducted between the monetary economic factors that were present during the Warring States period and the drastic monetary and other economic reforms that took place during the Ming dynasty. Additionally, the above-mentioned eras are approached by finding analogies between their sociopolitical and geopolitical factors. Analogies are also found between the changes those factors went through alongside the monetary economic reforms. The method is utilized due to the scarcity of relevant information that most of the other commonly utilized research methods can provide about the research topic.

The aforementioned research aspects are utilized to demonstrate that in China the round coinage was adopted to fulfill the function of an article of exchange that was adequate for the functions in the daily and local commerce. It is also shown that the existence of the round coins was necessary in term of increasing the affluence and self-sustainability of the local economies. That, in its turn, was a necessary process in terms of the states being able to gather sufficient amounts of tax funds to be used for the upkeep of their armies. As the state’s survival depended on the size, quality, and competence of its army, the above-mentioned economic factors played the most decisive role when it came to the monetary economic, geopolitical, and sociopolitical policy-making during the Eastern Zhou period, being especially pertinent to the Warring States period politics. All in all, the adoption of the round coinage was one of the most focal innovations that were made during the ancient monetization process of China.

Contents

Introduction

The Premise and Need for Conducting the Research

There exists a relatively large amount of Chinese, Japanese, and Western research material regarding the early economy of China. Among the aforementioned knowledge one can find a myriad of information regarding the monetization as well as the inception of the earliest round bronze coinage of China. The main focus of this research, however, is in the round coinage of China. It is evident, nevertheless, that the two aforementioned topics are inseparable. Hence, this research also covers many aspects that are in relation to the early monetization of the economy of China.

Despite the wide spectrum of knowledge available to date, many questions regarding the early forms of Chinese round coinage are yet to be answered. Many topics, such as the origin of the innovation of the round coinage in China (was it an outcome of diffusion or an indigenous idea), (Horesh & Kim 2011/2012) remain unanswered to date. However, this research (a master's thesis of archaeology at the University of Helsinki, Finland in 2018) concentrates on understanding the relationships between the physical properties (shape, size, weight, material, etc.) and the usage (circulation, functions and value) of the early round coinage of China.

There are quite many possible reasons (some being very rarely discussed) as to why the Chinese states adopted the round bronze coinage into their economical systems during the Zhou dynasty (周朝) (1046 - 256 B.C.). To be more specific, this happened during the Eastern Zhou period (東周) (770 - c. 256 B.C.), that is divided into the Spring and Autumn (春秋時代) (771 - 475 B.C.) and the Warring States (戰國時代) (475 - 221 B.C.) periods. The Zhou family ruled the united empire during the Western Zhou period (西周) (1046 - 771 B.C.),

yet the empire became divided into numerous small states towards the end of the period. The Eastern Zhou period, that followed, was full of battles of defense and conquest that were brought about by the divided empire's autocratic states' strives for survival and supremacy. (See **Map 1** of the Warring States period China on page 5). It was in the turbulent times of the Warring States period when the round coinage emerged for the first time in the Chinese history.

This research argues that the convenient shape and the relatively small size of this new money type, together with the geopolitical and economic expansion of the competing states, played a pivotal role in the inception of the round coinage into many of the states' economic systems. The reasons as to this having taken place are observed through various aspects in the thesis. In addition to these aspects, it is also reasonable to believe that the Warring States period knife and spade moneys had more value than the round coins. This is due to the differences in the bronze currencies' physical size (see table on page 33) that basically dictates the amount of valuable copper that has to be used in manufacturing the currency. It is argued that as the round coins were generally smaller than the spade and knife currencies, they were also the least valuable of the three currency types. It is argued that the round currencies' lesser value made them adequate for daily purposes while the spade and knife moneys were generally used as means for engaging in international trade as well as various other kinds of monetary transactions in which currencies with larger value were useful.

0.1 - The Research Topics

In this thesis the reasons behind the inception of the round coinage of China are approached through various aspects. The main aspect is pertaining to the physical properties of the coins. It is argued that as the other bronze currency types that existed during the Warring States period were generally larger and heavier than

the new currency type, the round coinage, they were not adequate for the same functions that the round coins fulfilled and vice versa. This aspect is approached mainly by studying the different bronze currency types' area of circulation during the Warring States period, as well as by observing the general economic, geopolitical, and sociopolitical features of the Eastern Zhou period China.

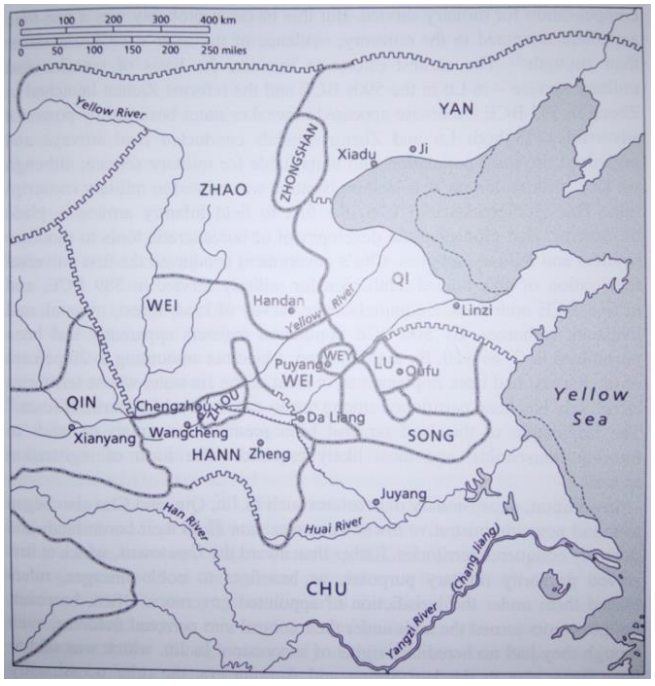
In addition to concentrating on the various aspects pertaining to the Eastern Zhou period, the monetary economic innovations that took place during the Ming dynasty (明朝) (1368 - 1644) are compared with those that took place during the Eastern Zhou period by using an analogical method. This is done for two reasons. The first reason has to do with the quantitative inadequacy of reliable historical literary source materials in regards to the Warring States period, and the abundance of such in regards to the Ming Dynasty. It is well known that many geopolitical, technological, economic, and many other kinds of societal changes happened during the Warring States period. However, there is a scarcity of, or relatively exiguous amounts of original written historical source materials dating from the Warring States period that pertain to the aforementioned topics (Kakinuma 2014, p. 79 - 80; Lewis 1999, p. 587 - 593; Wilkinson 2013, p. 697 - 698). What makes the situation even more complicated is the fact that the literary materials deriving from the Warring States period (and before that) often form only a fragmented entity of any given topic (Lewis 1999, p. 587).

Additionally, many of the historical literary sources that describe events that happened during the Warring States period have been written in times after the period (Kakinuma 2014, p. 79 - 80). Therefore, their reliability in studying the Warring States period has to be put under a question mark. One such source is the *Shiji* (史記), or the *Taishigong shu* (太史公書), known in English as the "Records of the Grand Historian". The book was written during the first half of the Han dynasty (漢朝) (206 B.C. - 220 A.D.) by historian Sima Tan (司馬談) (165 - 110 B.C.) and his son Sima Qian (司馬遷) (c. 145/135 - 86 B.C.). The *Shiji* is one of the major sources in studying the Warring States period, yet its reliability as a research material is rather dubious (Hulsewé & Loewe 1979, p. 3 - 25; Pines 2005/2006). The aforementioned is not so much an issue when it comes to studying the Ming dynasty. The abundance and entirety of the written source materials dating from the dynasty have enabled many researchers to study it in a

profound and minute manner, (Wilkinson 2013, p. 788 - 805) which has provided a multitude of scientific material over a variety of relevant subjects. Their abundance, easy availability, and the detailed information that they provide have created the first reason as to why the Ming dynasty was selected as the main source of the analogical studies that are presented in this thesis.

The second reason for choosing the Ming dynasty as the source of analogical studying is for the fact that during the dynasty many drastic monetary economic and sociopolitical reforms took place. These reforms were of an unforeseen scale in the history of China. However, in many ways they resembled those that had taken place during the Eastern Zhou period, and hence understanding them provides much valuable information in terms of studying the early monetization of China. Moreover, the Ming Empire's monetary economic reforms were so tremendous and substantial in all of the history of China that Brook, in his book "*The Troubled Empire: China in the Yuan and Ming Dynasties*" (2010), has elaborated their importance as follows:

> "Moving the tax system from the founder's rural model of static communities to an economy of monetized exchange in the sixteenth century was the most important transformation of the Chinese economy prior to industrialization" (Brook 2010, p. 119).



Map 1: The major states of the Warring States period.
(von Glahn 2016, p. 53)

0.2 - The Zhou and Ming Dynasties in Brief

Before this research can proceed any further, it is necessary to give a brief introduction to the eras that are being discussed in this research, namely, the Zhou dynasty and its chronological subdivisions, and the Ming dynasty. The Zhou dynasty is often regarded as the "golden age" of classical Chinese history. Many famous and legendary Chinese scholars and intelligentsia lived during this era, and the written language, poetry as well as philosophy developed immensely during this dynasty (Lewis 1999, p. 583 - 586, 641 - 645). Also, the iron production in China began towards the end of the era, which rendered significant changes to the practices and efficiency of both the warfare and agriculture (von Glahn 2016, p. 46, 60; Kakinuma 2014, p. 107, 118). The dynasty is divided into two main periods (sometimes referred to as dynasties instead of periods), the Western Zhou period (西周) (1046 - 771 B.C.) and the Eastern Zhou period (東周) (770 - c. 256 B.C.). The appearance of round coinage of China happened during the Eastern Zhou period, (Peng 2000, p. 150 - 154) which is divided into two separate periods, the Spring and Autumn period (春秋時代) (771 - 475 B.C.) and the Warring States period (戰國時代) (475 - 221 B.C.).

The Western Zhou period was a rather coherent yet turbulent time in the Chinese history. The power within the empire was centered into the hands of the Zhou royal family that exerted power over the numerous vassal fiefs, *feng* (封), which were in turn ruled by the local nobility. The centralization of power to the royal family got weaker and weaker as the Western Zhou period lingered on, and eventually a war with foreign "barbarians" from north-west, that were joined by some Zhou subordinate fiefs, brought the Western Zhou period to its end. (Shaughnessy 1999, p. 292 - 351)

The Eastern Zhou period began from the shifting of the empires' capital due east from its previous location, whither the Zhou royal family withdrew, as well. During the Eastern Zhou period only little power if any remained at the hands of the Zhou kings. The era is divided into the Spring and Autumn period and the Warring States period. In these periods Zhou was divided

into multiple smaller states that fought against one another (Hsu 1999, p. 545 - 586; Lewis 1999, p. 587 - 650). The skill of iron production became popular in China during these times and partly due to this and partly due to other reasons the military technology and tactics took huge steps forward (von Glahn 2016, p. 46, 60; Kakinuma 2014, p. 107, 118). Also the monetary policies and coinage in general witnessed an expansion in both usage and typological diversity, with an inception of round coinage included in this (Peng 2000). It is adequate to say that the Warring States period's economy was a semi-monetized one. One could say the Spring and Autumn period is a bridge between the change of times from the classical China towards the Warring States period and the beginning of the imperial China, during the times of which the economic, social, and technological outlooks of China were very different from those of the Western Zhou period and before (von Glahn 2016, p. 11 - 128). This topic will be covered in more detail later.

How about the Ming dynasty (明朝) (1368 - 1644)? What is its role in the Chinese history? The Ming dynasty was the last Chinese-ruled dynasty in China. It was a time of economic growth and expansion in terms of foreign relations becoming geographically far-reaching and also relevant to the empire's monetary economy. Silver and copper currencies were in large-scale use. Especially during the 16th and 17th centuries the commerce and trade (both foreign and domestic) along with the merchants and industrial entrepreneurs prospered in the Empire of Ming, and new transportation networks were built to facilitate this prosperity. (See **Map 3** on page 76 for the map of the Ming Empire and the traveling durations within the empire). Multiple economic, agrarian and monetary political changes were made and the metal currencies played an ever greater role in maintaining the empire's economic wellbeing. However, in 1644 the Ming dynasty ceased to exist due to becoming conquered by the Manchus, but also many economic factors as well as natural causes had enabled the downfall of the empire. (Brook 2010; Twitchett & Fairbank 1998)

As will be shown in this thesis, the monetary economic and geographical situations during the Ming dynasty, namely, the acceleration of monetization process and the burden of transporting goods, were quite similar with the economic circumstances that were prevalent (or became that) during the Eastern Zhou period and especially during the Warring States period. The vast

land area that the Ming Empire covered had its share in creating problems in terms of management of cross-regional commerce and transportation - especially in areas of extreme terrain, such as mountains and deserts. Many of the large states that took shape during the Warring States period faced similar problems. It is due to these similarities between these two periods that this research proposes that the process of monetization, and the possible reasons as to why that took place during the Warring States period, can be studied through knowledge of the similar events that happened during the Ming Dynasty. The monetary economic reforms and other aspects of the Ming Empire are covered in detail in Chapter 3.

The next chapter will introduce the currencies that were used during the Eastern Zhou period, and will pay an especial attention to those that were used during the Warring States period. Even though most of the attention in this research is given to the bronze currencies, one cannot omit the studying of other forms of currencies, as they also played important roles in the Eastern Zhou period states' market economies. Hence, also many of them are introduced in the following chapter.

0.3 - The Research Materials and Methods

As was explained in Chapter 0.1, unlike from the times of the Warring States period, a lot of written material is available from the times of the Ming dynasty on the monetary economic factors. This has enabled us to attain a deep knowledge of the Ming dynasty. This knowledge can, with many of its socioeconomic similarities with those of the Warring States period, provide much needed deducibility onto the reasons that lead into the adoption of the round coinage and into the general monetization that happened during the Eastern Zhou and the Warring States periods.

The materials used in this research consist mainly of English language literature that cover the Chinese history in general or focus specifically on the Eastern Zhou period or the Warring States period, as well as on the Ming

dynasty. Some literature on the monetary economics and trade in general are utilized as sources, also. In addition to the aforementioned, also some archaeological materials are presented, although the research concentrates mainly on the contemporary literary sources (to many of them archaeological research has provided the knowledge that forms the bulk of their contents).

This research concentrates in analyzing three different research areas. The first one of them concentrates in analyzing and making comparisons within the Eastern Zhou period currencies themselves. The second one concentrates on the Warring States period itself. The various Warring States period political, economic and societal aspects are analyzed with the adoption of the earliest round coinage into the competing states' agrarian, taxation and trade systems. The monetary and societal reforms that came about during the Eastern Zhou period and went on throughout the aforementioned period are also analyzed in the light of the monetary economics. These analyses are done as to find out more economic, political and societal reasons as to why the round coinage was adopted into the monetary economic systems of the Warring States period states.

In addition to the aforementioned area of analysis, this research concentrates on a third aspect. That is manifested in the form of comparing the similarities that exist between the Warring States period and the Ming dynasty. The monetary economic, societal and geopolitical features of the Ming Empire are utilized in an analogical manner together with those of the Warring States period. In this, the previous analysis on the Warring States period's monetary economic and sociopolitical affairs is compared with the similar aspects that were present during the Ming dynasty.

This thesis approaches its research topic through an "analogical method". It is a common method while studying archaeological and historical resources (Renfrew & Bahn 2012, p. 176, 195, 309, 325, 400, 414, 500, 577; Seawright 2015). To put it in other words, the analogical method in question in this research could be defined as being a comparative method that concentrates on two distant eras that are interconnected with a cultural continuum and shared the same geographical area. In the case of this research, the Ming dynasty's monetary, market economy, and societal systems, their management and reforms, as well as the general geopolitical aspects are compared with those of the Warring States period. This means that analogy method is utilized to make deductions about what

Picture 1: Eastern Zhou period spade, knife, and round currencies, and their relative size differences (picture not in natural scale).
(< http://www.chinasage.info/imgs/MixedCoins.jpg > - copied and edited on February 10th, 2016)
(Photograph by David Hartill)

happened during the Warring States period. In the case of this thesis, the Ming dynasty's function is as the source of the analogical deductions while their target is the Warring States period. It is certain that the analogical method in general has its own limitations, but its adequacy in comparing the Warring States period with the Ming dynasty is explained throughout this research by showing the various similarities within these two distant eras. However, to make a simplified assertion of the socioeconomic situation during the Ming, it is adequate to state that the sheer scale and pervasiveness of the monetary economic reforms that took place during the Ming dynasty are something unparalleled in the history of China prior to the 19th century (Brook 2010, p. 119).

Even though this research is a master's thesis of archaeology, it is not "stereotypically archaeological" in its approach to its research topic, namely, the usage of the early Chinese round coins. This is, nevertheless, not a rare case when it comes to the archaeological research, and it is common especially among the research areas that concentrate on the historical eras. One must bear in mind

that archaeology is a mixture of different sciences and does not only rely on the primary research materials, but also on the modern research literature and historical secondary sources (Little 1992; Orser 2017; Renfrew & Bahn 2012). These different elements are present in this thesis, as well.

0.4 - The Chapters of the Thesis

The thesis has been divided into three main chapters, each of which include a set of arguments as to why the round coinage was adopted in China. They first lead the reader into understanding how the currencies of ancient China were like. After that, the scope is set into studying the round coinage of the Eastern Zhou period, and how was its relation with other currencies of the time, and when did the round coinage appear for the first time. Then, the economic life of the Eastern Zhou period is introduced. Especial attention is paid to the monetary economic and socioeconomic aspects of the Warring States period, as well as that of the Ming dynasty. In this research, all of the aforementioned information will be introduced and used in posing the many arguments as to why the round coinage was adopted into the Eastern Zhou period states' economies.

In order to make the contents of this thesis better understood, its main chapters and their general topics are listed below (read **Conclusions** on pages 89 - 92 for general information on the arguments, findings and results of this research):

Chapter 1: ***The Classical Chinese Currencies and How They Differ***

The Zhou and Ming dynasties are introduced in brief. The most common of the multiple types of currencies and trade items in Chinese history from the Shang dynasty to the late Zhou dynasty are introduced. The usage of currencies for various purposes during the Spring and Autumn and Warring States periods is explained. For reasons that pertain to clarity, this research does not introduce

every subtype of each currency type. The research concentrates on giving a coherent introduction to the major differences between the currency types, instead. The size of the bronze currencies is the key focus of this chapter.

Chapter 2: ***The Round Coinage in Literary and Archaeological Materials***

Dating the earliest round coinage is necessary in knowing which historical and archaeological sources are relevant in researching the early usage of the Chinese round coins. Unfortunately, the question of dating the first appearance of the earliest round coins in China is a puzzling one. The archaeological research has to this date not been able to give any precise dating as to the earliest appearance and adoption of the round coinage in China. However, it is highly likely that this happened during the 5^{th} and 4^{th} centuries B.C., as shall be explained in the chapter throughout the various kinds of information that are available in the contemporary literary scientific studies and publications. However, they often contradict each other and hence leave the topic riddled with many uncertainties, as shall be explained.

The chapter also concentrates on the various types of round coinage have been found in many different types of archaeological contexts. They can further testify both to the importance as well as to the myriad of usage of the round coinage during the Warring States period, and hence reveal possible reasons as to why the round coinage appeared in China, at all. Some archaeological material will be introduced in this chapter and the archaeological contexts in which the excavated round coinage has been found will be discussed in terms of backing up the research's arguments on the reasons for the adoption of the round coinage.

Chapter 3: ***The Society and Monetary Economics of the Warring States Period and Ming Dynasty***

The adoption of the monetary economic system in China during the latter part of the Zhou dynasty is discussed. The reasons for the monetization are explained in light of the competing states' power struggles, abolition of serfdom (or near-serfdom), diminishing of state control on trade, labor services, taxation, raising war funds, amassing large conscript armies, and defending the states.

Due to the relatively scanty amounts of original Warring States period literary sources that cover the topic of the monetary economics of the period, and due to the abundance of original literary sources on the Ming monetary economics, the latter topic is much better understood than the former one. These two eras of Chinese history are compared with each other in terms of the monetary economics and related politics. The various similarities between the aforementioned eras provide some clarity as to why the Chinese adopted the round coinage alongside other currency types.

Picture 2: Ancient Chinese currencies (photographs not in natural scale): 1) natural cowry shells (the round perforations have been made for placing the cowries on strings); 2) *huan qian* (ring moneys); 3) fragment of a *ying yuan* (gold block); 4) the obverse and reverse of three *yi bi qian* / *gui lian qian* (ant-nose / ghost-face moneys); 5) various types of currencies (see descriptions above for details).

(See page 100 for the photographs' sources)

Chapter 1

The Classical Chinese Currencies and How They Differ

There are two main research aspects that are introduced in this chapter. First, the various types of currencies and items of exchange that existed during the Spring and Autumn and the Warring States periods are be introduced. It will be pointed out that while some forms of currencies existed already prior to the aforementioned periods, the adoption of bronze currencies started for the most part from the early Eastern Zhou period onwards. After this, information on the size and weight of the Eastern Zhou period's bronze currency types is presented. Finally, a brief introduction to the Ming dynasty's bronze and silver currencies is given. None of the introductions goes into micro-specific levels of the discussed subject. Instead, they give a wide coverage of the whole topic so that the readers with less knowledge over this area of Chinese past can have a rough understanding as to what kind of historical eras and monetary material this research concentrates on.

1.1 - The Eastern Zhou Period Money and Coin Typology

There existed multiple types of currencies during the Shang dynasty (商朝) (c. 1558 - c. 1046 B.C.), the Western Zhou period, the Spring and Autumn period and the Warring States period. Below are introduced only the most commonly used ones. The currency in the context of ancient China does not refer to any strictly

defined money with a specific and tightly monitored and controlled value of exchange. Also the terms "coin" and "coinage" do not always refer to round moneys, as would be the case in a conventional sense, for they can sometimes refer to any forms of moneys or exchange articles in general. However, for the sake of clarity, it is very **important to note** that in this research the words "coin" and "coinage" refer to the round coins while "money" refers to the exchange articles of any other type than the round coins. In addition to this, with the word "currency", in this research, it is referred to both moneys and coins.

With the previous clarifications in mind, it is appropriate to move forward into introducing the ancient Chinese currencies. Due to the main focus of this thesis being the bronze currencies, they are introduced in more detail than the other forms of currencies or the items of exchange. The following is a brief list with some simplified and general information on some of the most common exchange articles and currency types that were used and circulated in China during the Shang dynasty, Western Zhou period, Spring and Autumn period, and Warring States period:

Cowry Shells (see **Picture 2** on page 13)**:**

Many cultures around the world have used marine shells as forms of money, articles of exchange, or valuable items (Trubitt 2003). The Chinese used cowry shells (貝幣) as mediums of gift exchange since, at least, the times of the Shang dynasty. According to the current knowledge they never functioned as money for commercial exchange. Instead, they seem to have been used mainly as valuable gifts and jewelry, (Kakinuma 2014, p. 83) and functioned also as a measure of value in the goods exchange (von Glahn 2016, p. 38 - 39) and also as articles of exchange (Kakinuma 2014, p. 109). There were generally two different cowry species used in China: *Cypraea moneta* and *Cypraea annalus*. They are around 2.2 - 2.0 cm in length and 1.5 - 1.7 cm in width. (Wang 1951, p. 66 - 67)

The cowries came to China either from modern day islands of Maldives, (Yang 2011) somewhere else in the Indian Ocean (Wang 1951, p. 68) or the South China Sea (Kakinuma 2014, p. 83) - possibly from more than one of the aforementioned places. Some conclude the issue of their origin by stating that the cowries came along the trade routes that span to China from the Eurasian Steppes (Peng & Zhu 1995). Due to changes in gift and rewarding customs, the

cowry-gift culture became obsolete during the mid-Western Zhou period. In spite of the changing customs elsewhere, some people still maintained the cowry culture alive and thriving. The state of Chu (see **Map 1** on page 5) - consisting primarily of people belonging to other than Han Chinese ethnicity - were still active in burying actual cowries in tombs and also used their man-made cowry imitations as currency even during the Warring States period. (Kakinuma 2014, p. 85 - 86)

Grain, Cloth, and Other Commodity Moneys:

In addition to the nutritional purposes, grain was also used as a way to pay for large transactions, such as taxes or land. Grain was used both before and after the adoption of bronze moneys into the states' economies. It worked as a paying method even after the unification of China under the Qin dynasty (秦朝) (221 - 206 B.C.). Grain was commonly used as a form of paying taxes - even when money was already used for that purpose - (Peng 2000; 170 - 172) and since the late Spring and Autumn period onward as a form of officials' and soldiers' salaries, that could later be sold to transfer it into money (von Glahn 2016, p. 98; Lewis 1999, p. 606 - 607). However, the price of grain could vary according to the season (Kakinuma 2014, p. 106; Peng 2000, p. 174 - 175).

Among the multipurpose commodities were also the silk and hemp textiles that were used as a medium of exchange during the Warring States period and even earlier, starting from the archaic times onwards (Wilkinson 2013, p. 565). Also hemp and silk were used as a form of paying taxes. Unlike grain, silk and hemp were sometimes regarded as actual moneys. In the state of Qin, for example, the cloth moneys had their own measure unit, followed legal regulations, and were exchangeable into bronze coins. (Peng 2000, p. 179 - 180; Wilkinson 2013, p. 565) As one would have needed enormous amounts of grain, hemp or silk in order to make large purchases, in such instances cowry shells, bronze ingots, or bronze vessels were used instead. Despite this, usually no fixed parities existed between the values of the cloth, gold and bronze currencies. (Kakinuma 2014, p. 95 - 98, 109) Good examples of other kinds of commodity moneys (many of which could also be used for paying taxes) that were used in China since archaic times are such merchandises as rice, turquoise, tea, sheep, (Einzig 1951, p.

108) tortoise shells, dogs, horses, pigs, leather, salt, precious metals, cowries, as well as jade and pearls, (Wilkinson 2013, p. 565) just to mention a few.

Pearl and Jade Moneys:

Not much is known about the use of pearl and jade as currencies in China. They worked, at least, as exchange articles and boasted ceremonial importance (von Glahn 1996, p. 31; Kakinuma 2014, p. 92, 117). In a 7th century B.C. text, named *Guanzi* (管子), it is stated that the early kings regarded "pearls and jade as superior money, gold as medium money, and spades (or clothes) and knives as inferior money" (Peng 2000, p. 213, 174 - 175; Williams, J. & Cribb, J. & Errington, E. 1997, p. 135). Like many other valuable items and products, called commodity moneys, also jade and pearls could be used as means for paying taxes. Whatever their function may have been during the Eastern Zhou period, they were still used for the previously mentioned purpose until being replaced with silver during the Ming dynasty in the 16th century (Wilkinson 2013, p. 565).

Ring Moneys (see **Picture 2** on page 13)**:**

The rings made of bronze, known as the ring money, or *huan qian* (環錢), first appeared sometime during the latter part of the Shang dynasty. The ring moneys are small (about 2.5 - 3.0 cm in diameter) and flat bronze rings with a round hole in the middle. The rings bear no inscription. They functioned as a form of official payments and as a substitute for punishments that included such practices such as branding, mutilation and death. The convicted person was entitled to pay a sum of 100, 200, 500 or 1000 pieces of *huan qian* (depending on the committed crime), which would hence grant the person an exoneration of his or her crimes. Similar ring money was still in use around the 5th century B.C., during the Eastern Zhou period. (Quiggin 1949, p. 242) However, the actual round coinage of China quite likely did not become a part of the early Chinese monetary economies before sometime during the Warring States period (see Chapter 2.1 of this research).

Bronze Ingot and Bronze Vessel Moneys:

Unprocessed bronze ingots as well as bronze vessels functioned as a form of currency that was used in goods exchange. They also functioned along with other

bronze currencies as means of stored value. The ingots were used during the latter part of the Western Zhou period and their usage extended well into the times of the Eastern Zhou period, as well. The usage of bronze currencies derives from the custom to use bronze ingots as ritualized gifts. (Kakinuma 2014, p. 87, 94 - 95, 108 - 110)

Cowry Imitation, Ant-Nose / Ghost-Face, and Gold-Plated Moneys
(see **Picture 2** on page 13)**:**

The state of Chu (楚) was a large state located south from the other states during the Spring and Autumn and the Warring States period. It was the only non-Chinese state in China during the aforementioned two periods. It did not adopt the spade and knife moneys or round coinage into its economy. Instead, it manufactured indigenous money types of many forms. (von Glahn 2016, p. 62 - 64; Scheidel 2009, p. 140 - 141, 169)

The Chu made imitations of real cowry shells. They were usually made either of bronze, iron, bone, clay or stone (Wang 1951, p. 69 - 79) and were possibly the forerunners of the ant-nose / ghost-face money (introduced on the next page). Unfortunately, the research and knowledge on the cowry imitation money still contains many uncertainties. Despite this, it is believed that the ones made of bronze probably functioned as money, (Kakinuma 2014, p. 87) but possibly also the ones made of stone and bone did - at least in some instances (Hartill 2005, p. 3; Wilkinson 2013, p. 565). My research goes on with an assumption that at least the ones made of bronze can be regarded as money. The bronze and bone imitations were made as early as during the latter half of the Shang dynasty, but their production peaked during the Eastern Zhou period (Scheidel 2009, p. 139). Those made of iron first appeared during the Western Zhou period (Wilkinson 2013, p. 565).

The imitation cowries were about the same size as their natural counter parts (not to be confused with the ant-nose / ghost-face moneys). They are generally about 2.8 - 1.7 cm long, 1.5 - 1.8 cm wide and 0.5 - 0.6 cm tall. (Wang 1951, p. 69 - 76) They probably functioned as money in some instances and first appeared after the middle of the Warring States period, sometime around the turn of the 4^{th} and 3^{rd} centuries B.C. and around 94% of the imitation cowries contain the same inscription. It is a single character that is probably the predecessor of *bei*

(貝) or *huo* (貨). These inscriptions attests to that the state had exerted grip over the circulation and possibly also over the manufacturing of this early form of money. In my opinion this shows that the currency had significance to the state. However the relation between the state and the currency may ever have been, it is known that the imitation cowries circulated only in the northeastern parts and in the surrounding subordinate states of the state of Chu. (Emura 2011; Kakinuma 2014, p. 87)

The ant-nose / ghost-face money, or the *yi bi qian* (蟻鼻錢) / *gui lian qian* (鬼臉錢) (this money type is called by two synonymous names) are small oval pieces of bronze that are found mainly in the area that belonged to the state of Chu. They usually contain high proportions of lead alloy, (Hartill, p. 3) and vary quite much in weight (given their small size), ranging from circa 1.4 grams and 4.4 grams (Wang 1951, p. 79). Their size is approximately 1.5 - 2.2 cm in length and 0.9 - 1.2 cm in width (Hartill 2005, p. 3). To give an example of their approximate size-weight ratio, I have chosen three bronze specimens from The British Museum's online collection. They are 1.6 cm, 1.6 cm, and 1.5 cm long, 0.9 cm, 1.0 cm, and 1.0 cm wide, and have a weight of 1.18 grams, 1.19 grams, and 1.38 grams, respectively (TBM, Registration Numbers: 1987,1111.2 & 1913,1011.14 & 1913,1011.15). Unfortunately, these specimens' thickness and metal alloy proportions have not been stated, hence I cannot explain the reason(s) to the relatively larger weight of the third specimen. Having their circulation limited predominantly within one state only, it seems that the ant-nose / ghost-face money, as well as the imitation cowry money were used primarily for domestic purposes (Emura 2011; Hartill 2005, p. 3; Kakinuma 2014, p. 87).

Gold was used in the form of bullions in many of the states. According to historical texts, gold was used as a form of money during the Warring States period. What is peculiar, however, is that although gold money is often mentioned in the literary sources, physical evidences of gold as money have only been found in the state of Chu. (Peng 2000, p. 208 - 209) The Chu gold money came in the form of blocks that are called *ying yuan* (郢爰) (although, synonymous variations of the name exist) or gold-plated money. They came in the form of small "plates" or "sheets" that have stamped blocks on. Their shape is irregular, being either rectangular, round or with two notched sides. They first

appeared sometime around the turn of the 6th and the 5th centuries B.C., during the early part of the Warring States period. They are generally about 3 - 5 mm thick (some even thinner) and of various length and width (some being even as large as 12.2 cm in length and 8 cm in width). On a "plate" or "sheet" there are varying quantities of square (or rarely round) stamps, inside of which there are usually one or two characters. One of them usually denotes to a monetary unit or weight, and the other one to the name of the Chu's capital city. The value of the sheet or that of an individual piece cut from the sheet was dictated according to its weight. (Hartill 2005, p. 79; Kakinuma 2014, p. 87; Peng 2000, p. 208 - 212; Scheidel 2009, p. 140)

It is also noteworthy that the state of Chu was the only state that engaged into the largest proportions of gold production in China during the Warring States period. In spite of this, it seems that gold was in shortage and valued in the state of Chu, as well (Peng 2000, p. 211 - 212). To some extent, the Chu gold functioned not only as a form of domestic but also as a form of international money (von Glahn 2016, p. 63 - 64). There is no certainty if any fixed parity between the gold-plated and other Chu currencies ever existed (Kakinuma 2014, p. 87 - 88). It is evident, nevertheless, that the state of Chu had pioneered in developing units of monetary value that enabled conversion of values between the different money types of the state (von Glahn 2016, p. 63). Whatever its value may have been, the *ying yuan* could be torn into suitable sizes according to the desired value. It is also necessary to mention that silver was rarely used as a form of currency during the Warring States period. (Kakinuma 2014, p. 87 - 88) Although, along with gold, it was handed out as a form of gift or reward for devoted service to the state during the Warring States period (Lewis 1999, p. 607). During the Qin dynasty, *banliang* (半兩) coins were regarded as lower currency while gold was regarded as upper currency, but pearls, jade, cowries, tortoise shells, tin and silver were deemed only as valuable items, not currencies (Yulu 2014, p. 6).

Spade and Knife Moneys (see **Picture 1** on page 10)**:**

Spade moneys (布幣) circulated widely during the Warring States period and were used extensively by the states located in the middle and east of the area.

Their name derives from their appearance that resembles the real spades. They were typically made of copper as the main component (usually around 80%, but sometimes as low as only 40%) with lead (15%) and tin (5%) as minor components. Some spade-shaped silver bars have been found numerous times in archaeological excavations, but their function remains unclear. They date from as early as the Spring and Autumn period, and do not appear in any historical textual sources. (Yao & Wang 2003, p. 22)

Spade-shaped bronze items first appeared during the Shang dynasty and the Western Zhou period, and functioned as items for commerce. During those times the spade moneys came only in few shapes and sizes - closely resembling the original farming implements that they imitated. (Hartill 2005, p. 4) Spade-shaped bronze items were probably used as actual money starting from the Spring and Autumn period onwards (Hartill 2005, p. 4; Peng 2000, p. 141). Starting from around 700 B.C., during the Spring and Autumn period, the spade moneys began to be inscribed. Originally, the inscription consisted of a single character that denoted to a number, a cyclical meaning, a place name, or a name of a clan.

As the Spring and Autumn period drew closer to its end - during the times when only very little was left of the Zhou Empire's hegemony - and new states were formed, the spade moneys started to appear in various shapes and weights. In addition to this, not only did the amount of different kinds of characters inscribed on the spade moneys become more diverse, but the number of characters inscribed on individual moneys increased also. Different states had their own forms and inscriptions, and as time went on, the inscriptions started to have a growing amount of monetary political meanings - such as the money's weight unit, name and other markings that were commonly found on the government standardized and regulated currencies. (Hartill 2005, p. 4 - 53; Peng 2000, p. 33 - 110)

The spade money is not the only money type that resembles mundane utensils. Another common money type that was widely in use during the Warring States period is the knife money (刀幣). As its name suggests, the money resembles a knife. This money type first appeared during the Spring and Autumn period (Kakinuma 2014, p. 88 - 89). Despite being made in different shapes and sizes, the knife moneys did not come in as many different forms as the spade

moneys did (ibid., p. 91). As was the case with the spade moneys, also the knife moneys came with many different inscriptions on them, denoting to various meanings - sometimes to monetary political aspects, sometimes to other things. As was the case with the spade moneys, also the early forms of knife moneys' inscriptions often consisted of only one character, but the number multiplied over time. (Hartill 2005, p. 54 - 78; Peng 2000, p. 110 - 117)

Just like the spade moneys, the knife moneys are typically made of copper as their main component and contain alloys such as lead and tin. Sometimes the metal composition varied greatly. In some cases the lead content can be close to 40% (Hartill 2005, p. 57). Also, sometimes the copper content was only around 40% of the money's total metal constitution. The knife moneys circulated widely in the northeast region of the former Zhou Empire and the Warring States period. (ibid., p. 54 - 78; Peng 2000, p. 110) The tradition of making money of this shape derives probably from the knife exchange culture of the semi-pastoral non-Chinese tribes that lived in what is today Northern China. The Chinese used knife moneys extensively in the trade between the Chinese states and also as means of foreign trade with the non-Chinese tribes and states located at north, adjacent to the Zhou China. (Emura 2011)

The spade and knife moneys came in various form and weight, and were manufacture by casting the metal mix into molds (Hartill 2005, p. xviii, 73; Peng 2000, p. 161 - 166). Of the spade and knife moneys and the round coins, the spade moneys were made the most in different types (Peng 2000, p. 33 - 110). The spade and knife moneys are usually rather hefty, being many times the size and weight of the typical early Chinese round coinage. Therefore, they were very likely not easily adoptable to be used as means of petty payments - unlike the smaller round coins - as will be pointed out later in this research. The spade, knife, and round currencies are discussed further in Chapter 1.2.

Round Coinage (see **Picture 1** and **Picture 3** on pages 10 and 25)**:**

The Chinese round coins were typically made of copper together with other alloys (Wang et al. 2005). They were manufacture by casting the metal mix into molds (Hartill 2005, p. xviii, 73; Peng 2000, p. 161 - 166). Most of the coins have a square hole, while some have a round hole in the middle. In addition to many possible religious reasons, (Kakinuma 2014) the hole was used for stringing

multiple coins together for easier transport and counting. In addition to this, the hole made casting the coins easier. (Williams, J. & Cribb, J. & Errington, E. 1997, p. 135, 141) The most common inscriptions found on the round coins are the name of the currency, weight unit, as well as the place of their manufacturing (Peng 2000, p. 119 - 124). The minting of the round coinage along with its base value was often dictated by the governments (Scheidel 2009, p. 142). The round coinage did not exist in as many different types as the spade moneys did. (Hartill 2005, p. 80 - 84; Peng 2000, p. 119 - 124)

The round coins, called by a variety of names in different states, were first used during the Warring States period, and circulated among the spade and knife money areas. With the state of Chu excluded, (von Glahn 2016, p. 62 - 64; Scheidel 2009, p. 140 - 141, 169) all of the states did eventually adopt round coins into their monetary systems. It is possible that the round coins were used in trade already during the 5th century B.C. or even earlier and most probably by the mid-4th century B.C the latest (Hartill 2005). Although, von Glahn places this at around 335 B.C., (von Glahn 2016, p. 62) while Peng places this at 336 B.C. (Peng 2000, p. 151). The dating of earliest round coinage of China is discussed in more detail in Chapter 2. There exists no certainty if the invention of the Chinese round coinage was influenced by any foreign empire or if the invention was indigenously and purely Chinese (Horesh & Kim 2011/2012).

The earliest Chinese round coins seem to originate from the Qin state (秦) (Peng 2000, p. 151) or some other state at the northern periphery of the Zhou dynasty, (Hartill 2005) such as the state of Wei (魏) (Kakinuma 2014, p. 92). They came in two different main forms, namely, the ones with a square hole in the middle and the ones with a round hole in the middle. The round-holed coins were present, for example, in the state of Wei, while the largest portions of square-holed coins have been found in the area corresponding to the states of Qi (齊), Yan (燕) and Qin (Kakinuma 2014, p. 92 - 93). The coins of the state of Qi are mainly of one type only, while in the state of Yan they were made in three different sizes. These three coin types are believed to have been cast to replace the Yan state's knife moneys, generally referred to as *Yanmingdao* (燕明刀). However, the Yan state's round coins seem to have circulated only within the state's borders, unlike the state's knife and spade moneys that have both been

found well beyond the state's borders. (Kakinuma 2014, p. 91, 93) However, the actual extent of the Yan state's currency type replacement remains unclear.

In the state of Qin many square-holed coin types circulated at the same time, but the *banliang* (半兩) were the most numerous. Like those of the Yan state, also this coin type's circulation was confined within the state only. The state dictated strict socioeconomic reforms at the middle of the 4th century B.C. and unified its monetary system in the same process. As a result, the *banliang* functioned as the primary bronze currency of the state of Qin while all foreign coins were excluded, and the value of goods was now measured by multiplying the number of coins. Unlike how the name of the coin would indicate, the coin did not usually have a weight of half a *liang* (兩) (or around 8 grams), but usually less than that. (ibid.) Nevertheless, the government dictated that all of them are to be of the same value, regardless of the weight (Scheidel 2009, p. 142).

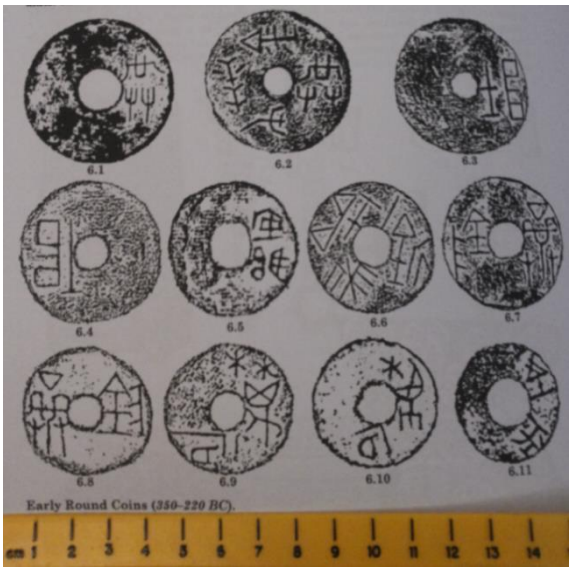
While the state of Qin primarily used only round-shaped bronze currencies, some of the other states retained in using them together with other bronze moneys. During the latter half of the Warring States period, as the Qin state advanced in its conquest to unify all of China, it spread its *banliang* coins to new areas as its empire expanded. The conquered states' indigenous money and coinage were replaced by the Qin coins. (Kakinuma 2014, p. 92 - 98) The spade, knife, and round currencies are discussed further in Chapter 1.2.

Summary:

Many of the money and coin types that have been aforementioned in this chapter circulated together, both domestically and internationally (Kakinuma 2014, p. 81, 97, 121). On the other hand, some currency types were used primarily within the state, while some were used also for interstate trade (commerce between the states). In the state of Qi, for instance, smaller knife money types were used for interstate purposes, but the largest knife money type was used solely within the state's borders (Li 2000, p. 44 - 48). What comes to the Warring States period round coinage in general, they were primarily utilized domestically (Kakinuma 2014, p. 110 - 111). Two other small sized money types from the Warring States period, namely, the Chu state's ant-nose / ghost-face money and the imitation cowry money circulated predominantly within the state of Chu's north eastern

parts and within its subordinate states' boundaries. Therefore, it seems that also these forms of currencies were used solely for domestic purposes (Emura 2011; Hartill 2005, p. 3; Kakinuma 2014, p. 87) and is in this case similar with the round coinage.

The Warring States economies were not entirely monetarized, meaning that paying in commodities was still a commonplace practice. Instead, the states took shifts towards more currency based economies. That can be seen, for instance, with the appearance of weight standard marking on the currencies. What makes this topic even more complicated to approach is the fact that each currency type of the Warring States period had rather different functions and values from each other as mediums of transaction and exchange. The modern currencies uniformity in being adoptable to different kinds of transactions and their ability to be interchanged with one another is quite simple in its nature. Adoption of currencies into such multitude of commercial traits was not that straightforward between the different types of the Warring States period currencies. This aspect will be explained in more detail later, in Chapter 1.3. It is now necessary to explain more about the general size and weight of the spade, knife, and round currencies, and how these aspects may have affected the adoption of the round coinage into the Warring States period states' monetary economies.



Picture 3: Drawings of Warring States period round coins in 1:1 scale (ruler in centimeters). (Drawings from Hartill 2005, p. 80. Photograph with a yellow ruler by Vilén, J. K., taken on February 10th, 2016)

1.2 - The General Size and Weight of the Spade, Knife, and Round Currencies

There is one visible general trend when it comes to the physical size of the currencies of the Spring and Autumn and the Warring States periods. The trend is that as time went on, the spade and knife currencies were reduced in size (Bernholz 2015, p. 80 - 81; Peng 2000, p. 176). For instance, the earliest spade moneys, those of the Spring and Autumn period, were generally many times as large and heavy as those of the late Warring States period. Similar trend is perceivable among the knife moneys. On the other hand, this trend does not apply to the evolution of the Warring States period round coinage. (Hartill 2005, p. 4 - 83; Peng 2000; Wang 1951)

The numbers given below are approximates and represent the general largest and smallest sizes and weights of the given currency types (see table on page 33). The idea is to give a general glimpse into the variety and differences both among and between different currency types. Those mentioned here are only typical individuals among the given currency type, and are therefore adequate to be treated as exemplary individuals for the currency type they represent. This means that there may be even smaller or larger specimens of any given currency type, but they are not common.

The size and weight of the currency do not necessarily go hand in hand. This means that there is no universal size-weight ratio. The reason for that is that the weight of the currency is not dictated entirely by its physical size but by the material that it has been made of. This applies despite many of the currencies containing weight unit inscriptions. Such inscriptions rather denote the intended value of the currency, instead. In reality, the weight varied a lot despite the nominal value of the currency (Scheidel 2009, p. 142). For the aforementioned reasons the largest and the heaviest currency types are not necessarily of the same type. The figures have been written according to the information written or drawn in the books *Cast Chinese Coins: A Historical Catalogue* (Hartill 2005); *Coinage and Commercial Development in Eastern Zhou China* (Peng 2000); *Rome and China: Comparative Perspectives on Ancient World Empires* (Scheidel 2009); *Monnaies Chinoises, I: L'Antiquité Préimpériale* (Thierry 1997); and *Early*

Chinese Coinage (Wang 1951). The British Museum's online collection has been utilized in providing supplementary information on the currencies' measurements (< http://www.britishmuseum.org/research/collection_online/search.aspx > - accessed on January 10th, 2018) (referred to with letters TBM). The search words "spade-money", "knife-money", and "Warring States coin" have been typed into the online collections' search field.

One must notice that the weight or width of some specific money or coin types or individuals have not always been available for me to find. In such cases I have not had any other option but to omit the lacking information from this research. It is also noteworthy that the different parts of the spade and knife moneys are often called with the same names that are used to differentiate between the different parts of the actual spades and knives that these moneys imitate. While the way to measure the currencies' length is self-explanatory, their width is usually measured between the widest points. In the case of the spade money they are usually its "shoulders" that are at that end of the "blade" where the "socket" is attached. In the case of the knife money the widest point is usually close to the tip of the blade (where the final curve towards the extreme tip of the blade starts). (See **Picture 1** on page 10 for further clarity on the issue).

Spade Money:

Among the largest (length and width) of the spade money are those of the Spring and Autumn period - the earliest forms of the spade money. The larger moneys are between 16.6 - 13.5 cm long and 9.85 - 8.4 cm wide (Wang 1951, p. 92) - weight not mentioned. There are also smaller early spade moneys. One such is 11 cm long and 6.4 cm wide. Its weight is 105.1 grams. (ibid., p. 93) The first spade money considered as an actual currency, the Square Shoulder Spades (平肩布), (Hartill 2005, p. 6) came in three sizes (large, medium, and small). The large ones are generally about 9.5 cm in length and 30 grams in weight, medium ones are 8.3 cm in length and 20 grams in weight, while the small ones are from 6.3 cm to 7.4 cm in length and 15.3 grams in weight.

As the Spring and Autumn period turned into the Warring States period, the spade money became smaller and lighter. Despite this, also some large money types were in circulation during the Warring States period. One such

currency type is the Pointed Shoulder Spade (尖肩布). They circulated around 500 - 400 B.C. (Hartill 2005, p. 17 - 18) and can be divided into the large, medium and small subtypes. The large ones are generally 14 cm in length while the medium ones are around 13 cm and the small ones around 11 cm. The large ones typically weight around 35 grams, medium ones about 33 grams. The weight of the small ones has not been stated in my source. (Peng 2000, p. 40 - 41) Nevertheless, during the late Spring and Autumn period, the most commonly found spade moneys are about 7 - 10 cm in length and have a weight of about 20 - 30 grams (Scheidel 2009, p. 139 - 140).

The smaller form of the *jianzu bu* (尖足布) money is a fine example of the reduction of the spade moneys' size along with the continuation of the Warring States period. While the large ones are around 8 cm in length and 12 grams in weight, the small ones are around 5.4 cm in length and 6 grams in weight (with a nominal value of half of the larger ones) (Peng 2000, p. 42, 46 - 47). Even smaller spade moneys exist, as some are only around 3.9 - 4 cm in length and around 2.2 - 2.3 cm in width (Hartill 2005, p. 47, 49). The two small spade moneys that I have selected from The British Museum's online collection, originating from the state of Yan, are both 3.5 cm in length. One of them is 2.4 cm in width and has a weight of 4.06 grams, while the other one is 2.6 cm in width and has a weight of about 4.5 grams (TBM, Registration Numbers: 1990,0920.8 & 1990,0920.7). For the sake of comparison, I have chosen to introduce a specimen of the Pointed Shoulder Spade, for it represents the early form of spade money. The money is located at The British Museum's collection, and has been 3D printed, as well (< https://www.myminifactory.com/object/hollow-handled-spade-money-1a-at-the-british-museum-london-16371 > - accessed on January 10th, 2018). The original money is 13.9 cm long, 6.4 cm wide, about 1.7 cm thick, and has a weight of 35.34 grams (TBM, Registration Number: 1883,0802.4).

As has been mentioned before, also some weight standards existed. For instance, the states of Wei (魏) and Han (韓) spade moneys followed a weight standard of 7 grams, 14 grams, and 28 grams (Hartill 2005, p. 24; Scheidel 2008, p. 4; Scheidel 2009, p. 140). In addition to this, during the Warring States period, spade moneys with a general length less than 5 cm and general width of 2.5 cm were common (Hartill 2005, p. 19 - 53). Additionally, the spade moneys that had

a weight between 7 and 5 grams were used widely during the Warring States period. Actually, the bulk of all the Warring States period metal currencies are made up of small spade moneys. (Thierry 1997, p. 89, 194 - 197, 202 - 237)

Knife Money:

In general, the knife moneys are larger than the spade moneys. The early forms of knife moneys are among the largest in size, but large types were made during the late Warring States period, as well. Therefore, the size reduction is not as obvious among the knife moneys as it is among the spade moneys. A good example of this can be made by comparing two different knife money types of the state of Qi. The *dadao* (大刀) type knives are generally around 18 cm in length, 2.4 - 2.9 cm in width, and have a weight of about 45 grams, which means that they are in general the largest of all the knife-shaped moneys. They are divided into the earlier Type I and the later Type II moneys. The Type I's first appearance can be dated to the middle of the Warring States period (around 350 - 300 B.C.) while the Type II can be dated a bit later (around 300 - 250 B.C.). In addition to this, the Type I of the *dadao* currency replaced the state of Qi's *mingdao* (明刀) currencies that were in circulation earlier. (Peng 2000, p. 115, 133 - 139) The *mingdao* are significantly smaller than the *dadao*, (Hartill 2005, p. 54 - 57, 74 - 75) hence the larger money type replaced the smaller one.

The American Numismatic Society has some *dadao* knife money's subtypes in its collection. I introduce two of their knives here. There is one that is 18.1 cm in length and has a weight of 73.65 grams. That money belongs to the large *jimo* (即墨) subtype. The money has a smaller subtype, as well. The smaller money in the American Numismatic Society's collection is 15.0 cm in length and weighing 50.10 grams. The society has also *anyang* (安陽) subtypes in its collection. They range between 18.6 cm and 16.3 cm in length and are about 3 cm in width. Elsewhere, also smaller specimens exist, one of them being 15.5 cm in length and 2.7 cm in width. (Wang 1951, p. 158 - 160) The *jimo* moneys are dated to around 300 - 250 B.C. while the *ancang* moneys are dated to around 350 - 300 B.C. - therefore, they both are money types of the latter half of the Warring States period. (Peng 2000, p. 136 - 139)

The early types of the knife money all tended to be of large size and weight. Some large knife money types appeared and circulated as late as during the last decades of the Warring States period. What changed from the early times of the knife moneys is that during the Warring States period also smaller types appeared. (Hartill 2005, p. 54 - 78; Peng 2000, p. 110 - 117, 126 - 140) The large and primitive knife money type called *jianshou dao* (尖首刀) was minted already during the Spring and Autumn period (Hartill 2005, p. 60 - 61). The ones that were excavated at the Lingshou (靈壽) town at Hebei province (河北) are circa 16.2 - 17.4 cm long and their weight is around 11 - 15 grams (Peng 2000, p. 128). There exist also later and smaller forms of this money type. For instance, the *jianshou dao* Type I is an early form while Types II and III derive from the Warring States period. The Type I is in general 17 cm in length and is dated to around 500 - 450 B.C.; the Type II is usually about 16 cm in length and is dated to about 460 - 410 B.C.; The latest form of the *jianshou dao*, the Type III, is around 15 - 14 cm in length and is dated to around 420 - 380 B.C. (ibid., p. 131 - 133).

The Straight Knives, *zhidao* (直刀), are among the smallest of the knife money. They circulated around 300 - 250 B.C. and were issued by the state of Zhao (趙) during the Warring States period. (Hartill 2005, p. 76) Their size generally ranges between circa 14 - 10 cm in length, and 1.5 - 1 cm in width. Also smaller, circa 7 cm long and 0.9 cm wide specimens exist. (ibid., p. 76 - 78) I have selected three straight knives from The British Museum's online collection to be represented in this research. One of them is 13.3 cm long, 1.4 cm wide, and has a weight of 9.21 grams (TBM, Registration Number: 1985,1034.2). The second one of them is 13.4 cm long, 1.7 cm wide, and has a weight of 8.81 grams (TBM, Registration Number: 1996,0612.81). The third one is 19.8 cm long, 1.5 cm wide, and has a weight of 10.33 grams (TBM, Registration Number: 1985,1034.1). As one can tell, the longest knife money is not significantly heavier than the shorter ones. This might have something to do with the moneys' thickness and/or metal alloy proportions. Unfortunately, these two details have not been available for me to find out anything about, hence I can only speculate about the issue.

Unfortunately, I have not found any 7 cm long knife money with information on its weight. Given that the aforementioned knife that has a weight

of 8.81 grams is about twice as long and wide as the aforementioned knife with a length of 7 cm and width of 0.9 cm, I deduce that the 7 cm knife would have about half the weight of the one that is twice its size. This would mean that its weight would be somewhere between about 4 and 4.5 grams. Another problem is that I have no information about this money type's general thickness or metal alloy proportions. Both of these factors can have great impact on the money's weight.

Round Coinage:

The round coinage is much smaller in size than the spade and knife moneys. Furthermore, the weight of the heaviest round coins is generally lighter than the weight of the lightest spade and knife moneys. They first appear during the 4th century B.C. - according to the current knowledge, at least. The ones that circulated in the spade money area have a round hole in the middle, while those that circulated in the knife money area have a square hole in the middle. (Hartill 2005, p. 80 - 83) (See **Picture 3** on page 25 for the size of some Warring States period round coins).

The largest of the Warring States round coins are about 4.2 cm - 4.3 cm wide and their weight is around 16 grams. The smallest of the coins are around 1.8 cm - 2.0 cm in diameter. (ibid.) The small coins sometimes have a weight of less than 2 grams. For example, at The British Museum's collection there is a round coin that is 1.8 cm in diameter and has a weight of 1.94 grams (TBM, Registration Number: 1983,0619.47). In addition to the width, the coins vary in thickness, also. The coins are generally just few millimeters thick, yet the thickness bears significance to the weight of the coin. For instance, in the collection of the American Numismatic Society there is a coin that is 4.1 cm in diameter and has a weight of 8.22 grams. Surprisingly, there are coins in the same collection that are not as large in diameter yet have a larger weight. This could be due to the coins' metal alloy proportions or due to the thickness. For example, one coin in the collection that is 3.9 cm wide has the same weight as another coin that is 3.5 cm wide, both being about 10 grams - hence, they both are smaller but heavier than the aforementioned 4.1 cm wide coin (Wang 1951, p. 199). Unfortunately, the coins' thickness has not been mentioned.

The weight of the coinage of the same monetary unit can vary a lot. For instance, the state of Qin's *banliang* (半兩) coins' name means half a *liang* (a Chinese unit of an ounce). As one *liang* is about 16 grams, the nominal weight of the coin should be around 8 grams. Despite this, they often have a weight of over 12 grams, and sometimes even less than 3 grams. (Hartill 2005, p. 83; Scheidel 2009, p. 142) This variation has to do with the governmental control on the contents of the coins' material (e.g. replacing some of the valuable copper contents with less valuable and heavier lead) and laws forbidding discrimination between different coins of the same value unit (Scheidel 2009, p. 142).

To demonstrate the variation of weight within the small/medium coins, I have chosen 10 small/medium Warring States period round coins from the online collection of The British Museum. What is important is the fact that they are all of quite the same width (varying between 2.8 cm and 2.4 cm). According to these specimens, one can also tell that the width alone does not dictate the weight of the coin. Unfortunately, any information on their place of origin, thickness or metal alloy proportions has not been stated. The chosen specimens' measures are as follows: 2.8 cm & 3.63 grams, 2.7 cm & 4.70 grams, 2.7 cm & 4.04 grams, 2.7 cm & 3.39 grams, 2.7 cm - 2.90 grams, 2.6 cm - 2.83 grams, 2.6 cm - 3.68 grams, 2.5 cm - 2.26 grams, 2,5 cm - 2.17 grams, and 2.4 cm - 2.52 grams (TBM, Registration Numbers: 1990,0920.27 & 1990,1920.16 & 1990,1920.26 & 1990,1920.23 & 1990,1920.22 & 1990,0920.28 & 1990,0920.24 & 1990,0920.21 & 1990,0920.19 & 1990,0920.29).

Summary:

According to what I have pointed out, one can come into some conclusions. Comparing the round coins with one another, one can tell that they vary a lot in size - some being over eight times as heavy and over twice as wide as the lightest and smallest ones (see table on page 33). The case is quite similar when doing the same comparison within the spade money and the knife money currency types. When comparing the lightest and the smallest of the round coinage with the lightest and the smallest of the spade and knife moneys, one can perceive one thing. The spade and knife moneys are never as light or small as the round coins. The smallest and lightest of the spade and knife moneys have about twice the size and weight of the smallest and lightest of the round coins. Similarly, the heaviest

of the spade and knife moneys have many times the weight of the heaviest round coins. The same drastic difference applies when comparing the size of the largest of the spade and knife moneys with the size of the largest of the round coins.

Currencies' measurements:	Spade moneys:	Knife moneys:	Round coins:
Longest:	16.6 cm	18.6 cm	-
Shortest:	3.5 cm	7.0 cm	-
Widest:	9.9 cm	3.0 cm	4.3 cm
Narrowest:	2.2 cm	0.9 cm	1.8 cm
Heaviest:	35.0 g	73.7 g	16.0 g
Lightest:	4.1 g	4.0 - 4.5 g*	1.9 g

The above table shows the bronze currencies' measurements as described in Chapter 1.2.
(The above figures have been rounded)
(* = the writer's own estimate)

One can only speculate if the round coinage with a weight less than 2 grams ever was is common use. Even if the generally lightest weight of the used round coinage was around, say, 5 grams, there would still be a marked difference between them and the lightest spade and knife moneys. As I have stated in this chapter, spade moneys that have a weight of around 5 - 7 grams were very common. Some spade types are even lighter, only around 4 grams. The lightest of the knife moneys' is about 8 - 9 grams (or between 4 grams and 4.5 grams if my estimated weight I gave to the small knife type of the length of 7 cm is included). Unfortunately, I have no information available as to the most commonly used knife moneys of the Warring States period. However, it is evident that the small knife money types are rare, and hence the commonly used knife money types were heavier and larger than the most commonly used spade money types (Hartill 2005, p. 4 - 83; Peng 2000; Wang 1951).

Archaeological findings have shed some light upon the issue of the weight of the most commonly used round coins during the Warring States period. For example, in Shaanxi province (陕西) a coin hoard containing 1000 coins, sealed by the state of Qin's government, was found. When storing coins in the state of Qin, 1000 coins was an equal number to be placed in each container. This number was referred to as 1 *ben* (畚). Of the 1000 coins found, 997 were *banliang* coins. 74% of these 997 coins have a weight of less than 5 grams, while about 6%

have a weight of less than 3 grams (Scheidel 2009, p. 142; Wilkinson 2013, p. 566). For the sake of an example, let us make a deduction that during the Warring States period coins with less than 3 grams of weight would have been less common than the ones with a weight between 3 and 5 grams, while those between 5 grams and 3 grams would have been the common ones, there still exists clear difference between the spade, knife, and round currencies. That is, the round currency is in general much smaller in size and weight than the spade and knife moneys. In other words, while spade and knife moneys that circulated in the Warring States period states contain many large and heavy individuals, the round coinage is always small in size and weight (in comparison to the large spade and knife moneys).

I argue that the difference in the currency types' general size and weight existed due to one primary reason. That is, when the round coinage started to be used as a form of currency (much later than the spade and knife moneys), it had already become clear that the small size and weight currencies were needed in the new kind of ecopolitical and monetized states of the Warring States period. Hence, the new form of currency - the round coinage - did not follow at the footsteps of the larger and heavier spade and knife moneys. Also, as each currency had its own function (see Chapter 1.3), there was no need for new large and heavy currency forms. Instead, a small and light currency such as the round coinage was needed. This may be why the state of Qin, that started to use bronze currencies quite late in comparison with many other states of the Warring States period, adopted primarily round coins instead of other forms of bronze currencies into its monetary economic system (Kakinuma 2014, p. 93). In addition to the previous aspect, the weight of the currency matters when it is carried in large numbers and over long distances. Logically, the value of the currency determines how many individual coins or moneys one has to carry in order to perform a given purchase or exchange - given that the currency type in question can be used for the given purpose. All of the aforementioned issues will be delved into in more detail later in this research.

The size of the currency has an economic significance, also, as the size of the currency matters in terms of the expenses it takes to manufacture it. After all, copper was not equally present within all of the states, and some had to rely on importing it in order to mint money and coins (Kakinuma 2014, p. 105 -

106, 110, 120 - 121). Therefore, the amount of copper within the currency was fundamental to its value. According to the historical texts, during the Warring States period there existed three different currency categories: silk and hemp, gold, and the bronze moneys and coins (Kakinuma 2014, p. 95 - 98, 109). With the copper being a valuable metal adequate for minting moneys and coins, the physical size of the currency, in its turn, affected the amount of copper and other metals that the manufacturing of the currency required. This aspect was acknowledged by the Warring States period governments. The solution was to establish governmental control over the currency manufacturing as well as the currencies' value. Hence, the actual value of the moneys' or coins' metal could be less than the market value of the currency (Bernholz 2015, p. 80 - 81). In addition to that, the governments often attempted to save copper by replacing it with other, less valuable metals, thus forbidding any discrimination between the different currencies with the same nominal value (Scheidel 2009, p. 142). The currencies' value along with the usage of different currency types are discussed next.

1.3 - What Were Different Money Types Used For?

Before proceeding any further in describing the different uses that the Eastern Zhou period currencies had, it is necessary to make clear the actual difference between bartering and using currencies. I also wish to point out that with the term "barter" I do not mean the usage of commodity moneys, for those are regarded as actual currencies in this research. Instead, with bartering I refer to exchanging non-currency items. Now, how do these two exchange methods differ from one another in terms of trade efficiency? Bartering was the main type of commercial method prior to the invention of currencies. An outright barter-only exchange method is slow and cumbersome as it requires that the exchanged items are something that both of the bartering parties desire in exchange for their own items. (Davies 2002, p. 13 - 18)

As opposed to the commodities, actual currencies are well suited for commercial purposes. That is due to their almost universal functions as means of exchange. (ibid.) During the Spring and Autumn and the Warring States periods this had eventually became evident to the states' governments (von Glahn 2016, p. 44 - 83; Scarre & Fagan 2016, p. 353). Therefore, a huge and swift expansion of monetization was witnessed during those periods. The amount of the spade moneys in circulated during the Warring States period was about 10 times larger than what it had been during the Spring and Autumn period. (Goetzmann 2016, p. 159) This signifies that there was a drastic expansion in terms of monetization, for the bulk of all the Warring States period metal currencies are made up of small spade moneys (Thierry 1997, p. 89, 194 - 197, 202 - 237).

During the Spring and Autumn and the Warring States periods the currencies were priced in a 3-tiered system: 1) fixed official price, 2) official price (varied monthly or yearly in each prefecture, 3) the actual price. In the 3-tiered system the bronze moneys functioned as the measure of all commodities' value. Even though currencies were divided into three tiers did not mean that one currency type was strictly more valuable than the other. This is for the reason that different currencies were not necessarily used interchangeably for the same functions. They all had their own functions in different types of purchases and different levels of economic transactions (e.g. buying land, paying taxes, paying wages, small purchases, etc.). According to the excavated historical texts, during the Warring States period three different currency categories with their own functions were recognized. Those are the silk and hemp, gold, and the bronze currencies. (Kakinuma 2014, p. 95 - 98, 109) Although, in a text from the 7th century B.C., named *Guanzi* (管子), it is stated that the early kings regarded "pearls and jade as superior money, gold as medium money, and spades (or clothes) and knives as inferior money" (Peng 2000, p. 213, 174 - 175; Williams, J. & Cribb, J. & Errington, E. 1997, p. 135).

It is not fully clear how pearls and jade were used as a currency, or if they even ever were used as such in ancient China. Nevertheless, they were objects of high value and would therefore probably have been used for large transactions if they ever functioned as currencies or exchange articles. (von Glahn 1996, p. 31; Kakinuma 2014, p. 92, 117) What is certain is the fact that the gold and cloth currencies were indeed used as a form of money in addition to various

other purposes. They were used for various payments, such as governmental salaries, rewards to soldiers, paying taxes or buying land. (Kakinuma 2014, p. 95 - 98, 109; Peng 2000, p. 170)

The usage of bronze currencies was extensive during the Warring States period - in both domestic and foreign trade (Bernholz 2015, p. 80 - 81; Linduff 2009, p. 95). In addition to this, the bronze currencies were also used for paying taxes and salaries. For instance, it is stated in the *Guanzi* (管子), originating from the 7th century B.C., that the ruler could pay officials' salaries in bronze currency. In another historical text, the *Xunzi* (荀子), deriving from the 3rd century B.C., the heavy taxation in the form of knife moneys and cloth moneys is criticized. (Peng 2000, p. 171 - 172) There exists evidence that the multifunction of the bronze currencies included round coinage, also. For instance, the usage of *banliang* coins included paying taxes, fines and salaries (Kakinuma 2014, p. 111 - 113, 116). It is highly likely that in many of the states bronze currencies were used by the people from both the high and low classes of the society. This included both soldiers and peasants alike. (Peng 2000, p. 170 - 175; Liu 1975; Wagner 1996, p. 176 - 182) It is also possible that round coinage was used to pay mercenaries' salaries during the Warring States period (Kakinuma 2014, p. 94).

In addition to the aforementioned, at least knife and spade moneys were be used in procuring the much required funds that were required in order for the states to fight wars. For example, the states of Yan and Qi procured war funds with their knife moneys, while the state of Wei did so with its spade money. (Kakinuma 2014, p. 90 - 91) These practices are in relation to the fact that during the Warring States period usage of bronze currencies expanded radically. (Kakinuma 2014) Also commerce benefited from the usage of currencies. In addition to using grain, also cloth money and various other types of articles of exchange were used as means for commerce between different states. Likewise, so were the bronze moneys and some of the round-holed coins used as mediums of exchange in the commerce of transnational scale. This explains why so many states used similar moneys and coins with their neighboring states and many of the moneys and coins are found in the neighboring states of their original state of manufacturing (ibid., p. 110). Although, the round coins of the Warring Stated period were mainly used domestically, (ibid., p. 110 - 111) and played an

important role in local economies. This aspect will be returned to later in this research.

The production of metal moneys and coins was sometimes dictated by the state, but it was also the merchants and other private individuals who sometimes did the minting, with more or less state control over the currencies' quality, quantity, and value. (von Glahn 2016, p. 72; Scheidel 2009, p. 142). It is also quite possible that despite any attempts to regulate the money production, the face value of the currency type was at times lower than its intrinsic value (Bernholz 2011; Bernholz 2015, p. 80 - 81; Peng 2000, p. 175; Scheidel 2009, p. 142; Wang et al. 2005). It is therefore possible that the so-called "Gresham's Law" may at times have taken place. This means that the more valuable articles of exchange would have been replaced by the less valuable ones in circulation (Bernholz 2011). It is also noteworthy that between different forms of currencies (both bronze and other kinds of currencies included), probably no fixed parity existed (Kakinuma 2014, p. 97). Nevertheless, moneys and coins followed weight standards (Hartill 2005, p. 24; Scheidel 2008, p. 4; Scheidel 2009, p. 140).

The metal content of the bronze moneys and coins did not go unaltered as the time went on from their initial adoption into the states' economic systems. On occasion, the currencies' copper contents were reduced and replaced with other metals. This would mean that eventually the value of the currency was not dictated by the actual value and amount of the metal(s) that they were made of. Without government control, the bronze currencies' value would decrease as less valuable metals were used to replace the more valuable copper. People choosing the more valuable currencies and discriminating the less valuable ones goes by the modern term Gresham's Law. This was usually not allowed to happen as the values of the currencies were dictated by the governments, and attempts were made to forbid people from choosing and discriminating between the different currencies with the same nominal value. (Bernholz 2011; Bernholz 2015, p. 80 - 81; Peng 2000, p. 175; Scheidel 2009, p. 142)

The content of the material that the bronze currencies were made of was not the only change that the aforementioned currencies went through during the Spring and Autumn and the Warring States periods. As has been explained in Chapter 1.2, also the size of the currencies changed. Many of the bronze currency types came in different sizes and values. These types were interchangeable. For

instance, as was mentioned earlier, the smaller type of the *jianzu bu* (尖足布) had half the nominal value of its larger counterpart (Peng 2000, p. 46 - 47). In addition to this, the spade and knife moneys were gradually reduced in size as the Warring States period went on (some of the late knife money types were an exceptions to this trend), but they could be more valuable than the metal they contained (Bernholz 2015, p. 80 - 81; Peng 2000, p. 176) (see **Picture 1** on page 10 for size comparison).

What is also noteworthy, in my opinion, is that as their size reduced they went closer to becoming something like the round coinage. I argue that this could mean that the large size of the bronze currencies made them unhandy in the monetizing economies where small currencies are needed in everyday transactions. As I have explained in this chapter, the societies' level of monetization expanded into all the social levels. I also argue that it is possibly not the only reason for the size reduction. It is also clear, as I have explained in this chapter, that the Warring States period governments were attempting to save the valuable copper and thus render the moneys and coins more valuable than what the value of their actual material contents would have dictated. This could be achieved by implementing government control on the minting, material contents and value of the coins as well as laws prohibiting discrimination between the metal currencies with the same nominal value (von Glahn 2016, p. 72; Scheidel 2009, p. 142).

I also deduce that the smaller physical size of the money in comparison with its value would also save storage space in the warehouses. Also, I have argued that the size matters in terms of carrying and transporting the money. If there was a choice to be made, one would probably prefer to carry a currency that has the best size/weight-value ratio. I argue that perhaps this is the reason why the round coins are found mainly within the states where they were manufactured (Kakinuma 2014, p. 110 - 111; Li 2000, p. 44 - 48). It is logical that under normal circumstances the larger the size of the bronze currency is, the larger amount of valuable copper and other metals are needed in order to manufacture them. This makes the money's value higher, which in its turn means that, in the case of the large spade moneys, for instance, they were clearly not adequate to function as a small change (Hartill 2005, p. 4).

Unfortunately, it is not clear what kinds of size/weight-value ratios there existed between different bronze currencies. This means that there exists no

certainty if it would have been better to carry round coins over long distances instead of larger spade and knife moneys. It is highly likely, nevertheless, that the states guaranteed some currencies a high value within their borders (Li 2000, p. 45). There may have also existed restrictions that would have dictated that certain currency types can only be used for certain purposes (Kakinuma 2014, p. 95 - 98, 109). I have also noted that the expansion of interstate trade during the Eastern Zhou period (Peng 2000, p. 230 - 235) coincides with the gradual reduction of the bronze currencies' size. Therefore, I argue that the interstate trade had a role in defining the adequate size of the currencies. This aspect will be discussed further in Chapter 2.2.

Nevertheless, the Warring States period spade and knife moneys have often been found together with the round coinage (Hartill 2005, p. 36, 82). As the different money types have been found together, and taking into account the wide span of different archaeological contexts where the money and coins have been found together, it seems likely that they all bear importance in the ever more monetized economies of the Warring States period (the archaeological material on round coinage is explained further in Chapter 2.2 of this research). It can also be attested, according to the archaeological findings, that the round coinage had a much more domestic area of circulation than the spade and knife moneys in general (Peng 2000, p. 183 - 206). As has been mentioned earlier, the round coinage seems to have been intended for usage within the borders of the state that manufactured them (Kakinuma 2014, p. 110 - 111).

As was mentioned earlier, the minting of moneys was usually controlled by the governments. Yet, some states exerted less state control and regulations on coin minting than others (von Glahn 2016, p. 72). Strict government control on coin production was exerted, for example, in the state of Yan where knife moneys with the inscription *ming* (明) were deemed to be the standard money. They were used for procuring war funds from the cities. Also spade shaped moneys circulated alongside with them. Same was the case in the state of Qi with the *dadao* (大刀) knife shaped money. Both of the aforementioned moneys were standardized by the government. Same may have been the case with regards to the state of Wei's large spade shaped moneys.

Although, in the aforementioned instances the spade and knife shaped moneys did probably have different functions as moneys. (Kakinuma 2014, p. 90 - 91)

Despite the wide circulation and usage of the multiple money types, there are some states which eventually reduced the amount of different money types that were accepted as currencies in their kingdom. The state of Qin, for example, eventually replaced almost all of the bronze currencies - both foreign and domestic - in circulation with its *banliang* (半兩) coins. Also the state of Yan seems to have replaced its indigenous knife money with the round coinage. Eventually, all of the states (except for the Chu) seem to have made the round coinage their standard bronze currency since the middle of the Warring States period. The minting of round coinage had to be carried out following governments' standards and control, which indicates their importance as a form of currency. Same was usually the case in minting of the spade and knife moneys. (Kakinuma 2014, p. 93 - 95; Scheidel 2009, p. 140)

This kind of process of money type replacement, standardization and government control, in my opinion, would once again point out to the main argument of this research, which is that the small round coinage was probably adopted for and played a key role in the everyday commerce that the people performed. I believe that this was the situation regardless of one's social or economic status. I argue that the aforementioned processes also played a key role in enhancing the efficiency of the states' internal commercial economies, which generally benefited even those with a low economic status. I argue that the effects of the round coinage were mainly positive, even while the inequalities that were brought about by the market economy, excess taxation, and the states' pursuits to increase the farmers' productivity had impoverished many, which sometimes led to money lending and usury (Weld 1999, p. 85; von Glahn 2016, p. 74 - 81, 98 - 99; Kakinuma 2014, p. 119; Lin 1992, p. 328; Sterckx 2015, p. 222; Hsu 1999, p. 582). It is evident, as will be presented in detail later in this research, that both the socioeconomic reforms and the expansion of the monetization among the people of low economic status (Peng 2000, p. 175) were necessary and essential in the struggles for survival that the states of the Warring States period were faced with (von Glahn 2016, p. 72 - 81). I also argue that similar trend of small and light money type being used as a form of domestic currency was also witnessed in the state of Chu. The state's ant-nose / ghost-face money and the imitation cowry

moneys were small and had a light weight, and both had a domestic area of circulation (Hartill 2005, p. 3; Emura 2011; Kakinuma 2014, p. 87). This being the case, the round coinage should be compared more with the aforementioned currencies of the state of Chu. Unfortunately, this has to be done in some other research, instead.

The Eastern Zhou currencies are left aside for a while, as this research will now shift into introducing the primary currencies that were used during the Ming dynasty, namely, the round bronze coins and the silver ingots, or sycees, as they are also called.

1.4 - The Ming Coins and Ingots

During the Ming dynasty there existed bronze coins of different size and value, and they all were flat, had a square hole in the middle, and were made by using casting methods. The Ming bronze coins are referred to commonly as *tongbao* (通寶) (See **Picture 4** on page 45 for the general appearance of the Ming dynasty bronze coins). The older and newer *tongbao* types circulated simultaneously. Sometimes they had different exchange rates due to some coin types having gone through debasement. In addition to this, the preferred types and qualities of the coins as well as those of the silver varied markedly from location to location. (Brook 2010, p. 120 - 121; von Glahn 1996, p. 11, 102, 187 - 197; Kuroda 2005, p. 65 - 86)

There existed 1, 2, 3, 5 and 10 cash *tongbao* coins. In general, the 1 cash coins are about 2.0 - 2.5 cm, the 2 cash coins about 2.5 - 3.0 cm, the 3 cash coins about 3.0 - 3.4 cm, the 5 cash coins about 3.3 - 4.2 cm, and the 10 cash coins about 4.2 - 4.7 cm in diameter. (Hartill 2005, p. 237 - 262) To give an idea of the Ming dynasty coins' approximate size-weight ratio, I have chosen seven Ming dynasty coins from The British Museum's online collection to function as examples. I have also chosen one coin from The Yale University Art Gallery's

online collection. The following 5 coins have been dated to 1368 - 1398 and are found in The British Museum's online collection. The coin under the Registration Number 1985,0223.6 has a weight of 11.61 grams, and is 3.3 cm in diameter. Another coin, with the Registration Number 1870,0507.14718.160, has a weight of 34.76 grams, and is 4.6 cm in diameter. The coin with the Registration Number 1999,0802.149 has a weight of 10.06 grams, and its diameter is 3.6 cm. The coin with the Registration Number 1883,0802.1165 has a weight of 29.58 grams, and its diameter is 4.5 cm. There is a coin in the collection with the Registration Number 1999,0802.151. It has a weight of 9.32 grams, and is 3.9 cm in diameter.

In addition to the five aforementioned coins that have been dated to 1368 - 1398, there is one coin at The British Museum's online collection that has been dated to 1361 - 1368. Its Registration Number is 1996,0217.746, and it has a weight of 21.06 grams, and a diameter of 4.3 cm. There is also a very light coin at The British Museum's online collection. The coin has not been properly dated, but it is stated that the type was first issued in 1576. The coin has a weight of 2.94 grams, and a diameter of 2.4 cm. The coin's type is *Wanli tongbao* (萬曆通寶), and that type of coin was minted between 1573 and 1620 (Hartill 2005, p. 250 - 251). There is a coin of the same type at The Yale University Art Gallery's online collection, and the given coin has been dated to 1573 - 1619, or late Ming dynasty (< https://artgallery.yale.edu/collections/objects/215447 > - accessed on March 15th, 2018). The coins' Registration Number is 2001.87.55723, it has a weight of 3.38 grams, and is 2.55 cm in diameter. As the aforementioned examples show, one can tell that the Ming coins varied more in weight than in size, and many of the coins were even heavier than those of the Warring States period.

In addition to the bronze coins, silver ingots were in common use during the Ming dynasty. They came in various shapes and sizes. (See **Picture 5** on page 45 for the general appearance of the Ming dynasty silver ingots). The ingots are called *yuanbao* (元寶), or sycees, as they are often called in English. Their weight was measured in the *liang* (兩) measure unit that is often translated into English as tael. During the Ming, one tael was an equivalent of around 37.5 grams. (von Glahn 1996, p. 11, 103) The ingots were not limited to one tael size, however, for they could be smaller or larger than that in weight. The ingots were appraised according to their weight, and did not follow any strict size and weight

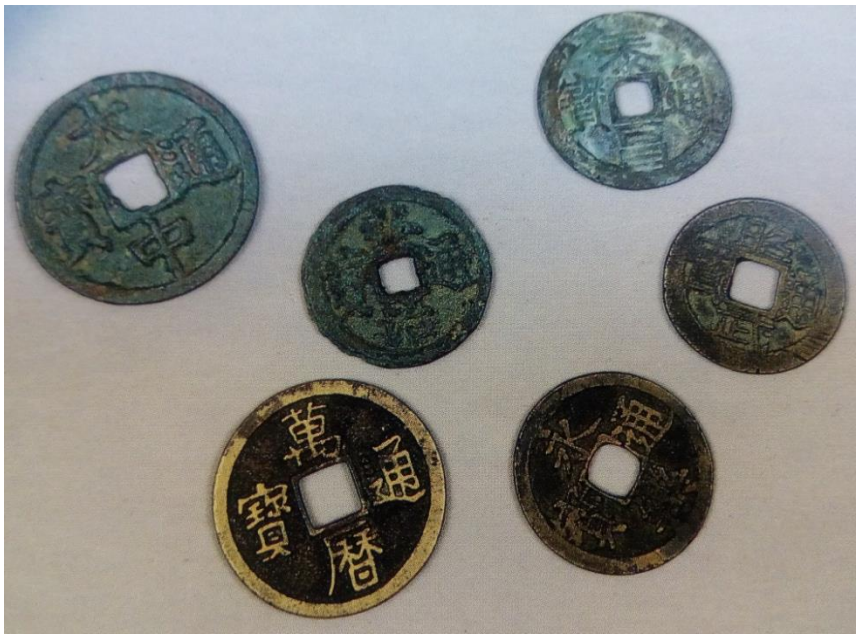
standards. (Michael 2016, p. 147 - 148) The ingots' weight-size ratio would vary as the sycees were not always made of pure silver. Due to this, assayers were used to determine the quality of the ingots (Atwell 1998, p. 383 [footnote 24]).

Unfortunately, it is very hard to find any data regarding the average size-weight ratio of the Ming sycees. I have ended up trying to solve this problem by searching The British Museum's online collection with the search words "silver ingot", "tael" and "sycee". Within the collection there are not many Ming ingots, and therefore I have had to resolve the problem by using the 18th century, or the early Qing dynasty (大清) (1644 - 1912) ingots of the collection as references in order to elaborate the silver ingots' approximate weight-size ratio. At the museum's online collection I found, however, one 17th century sycee (could derive from the very late Ming or the very early Qing times). The ingot has 211.38 grams of weight, or around 5.6 taels. The ingots' width is about 4 cm (the item lacks any further information, but according to the photographs taken of it, the item seems to be about 6 cm in length, but its approximate height remains unclear). Its Registration Number is 1993,0638.2.

I found other Chinese silver ingots at The British Museum's collection, but they are from the 18th century, or the first half of the Qing dynasty. There is one with the Registration Number 1987,0652 that has a weight of 221.16 grams (about 5.9 taels), length of 5.7 cm, width of 3.8 cm, and height of 2.9 cm. At the museum's collection there is also an ingot that has been dated to 1757. One can find it under the Registration Number 1983,0245.35. It has a weight of 1868.22 grams (about 49.8 taels), length of 11.2 cm, width of 7.5 cm, and height of 7.6 cm. In addition to the aforementioned ingots, there is also a sycee of about 1.25 taels of weight (46.74 grams) at the museum's collection. Its Registration Number is 1979,0229.2, and it has a length of 3.7 cm, width of 1.6 cm, and height of 1.8 cm.

In Chapter 1.4, the general size and weight of the Ming metal currencies was introduced. The silver-copper exchange ratios as well as many other monetary economic aspects of the Ming dynasty are discussed further in Chapter 3.2. The Ming dynasty is left aside for a while as the next chapter, Chapter 2, will introduce some of the modern literature on the earliest round coinage. The literature is used in understanding when the first round coins of China were cast. In addition to this, some Warring States period archaeological

materials will be introduced later in the same chapter. Those will be observed in the light of what kind of information they can provide pertaining to the area of circulation and the functions of the round coinage in the societies of the Warring States period.



Picture 4: Ming dynasty *tongbao* (bronze coins) (photograph not in natural scale).
(Wu [chief editor] & Yu & Yu 2004, p. 39. Ding Guoxing [photographer])

Picture 5: Ming dynasty *yuanbao* (silver ingots). These ingots were hid into a river in the early 17th century.
(< http://usa.chinadaily.com.cn/a/201704/13/WS59bb7f9da310d4d9ab7e9026_4.html > - copied and edited on March 13th, 2018)
(Photograph by China Daily, published on April 13th, 2017)

Chapter 2

The Round Coinage in Literary and Archaeological Materials

When did the first round coins appear in China? What can archaeological material reveal about the usage and importance of the early round coins of China? The knowledge of when the first round coinage appeared in China is important in regards to the question of the usage and importance of the round coinage in the Chinese Warring States societies. This is because the dating provides a necessary knowledge on which period of time in history one should pay most attention to when researching the reasons and background to the beginning of using the round coins in the Chinese societies of the Warring States period. To put this in other words, in order to make reliable deductions on the economic and social events in regards to the usage of round coinage, one must first define a scope of interest on a certain period of time in Chinese history that can shed light upon the research topic. In the case of this research there exist two such periods, namely, the 5th and 4th centuries B.C. and the Ming dynasty (1368 - 1644). The decision to choose the 5th and 4th centuries B.C. as the focus of research is explained next. This is done by using both modern and historical literature on the Warring States period as the sources and references.

Unfortunately, there is no easy answer as to when the earliest round coinage appeared in China. There are three reasons for this difficulty: 1) the ancient textual materials from the pre-Qin and Qin China, as well as those from the Han dynasty (漢朝) (206 B.C. - 220 A.D.) that followed it, are relatively sparse in their reference to the topic, and hence cannot shed much light upon the issue; 2) the modern literature and research material available on the early Chinese coinage is not unanimous when it comes to dating the coins; 3) the archaeological research material has not granted any precise and conclusive dating to the first appearance of the round coinage in China.

It is best to first discuss about the historical textual materials. The original textual materials that derive from the Warring States period and soon after its end, and relate to the monetary politics, are quite few in quantity, yet can still provide precious information when it comes to this research. To give just an example of such materials, there exists a textual source called "*Shoufa*" (守法) or "Market laws" (although, it is fragmented) that depicts, for instance, the value of commerce to the wellbeing of the state. It also describes laws pertaining to the location, size and structure of the marketplaces. This textual source was found in a tomb that was built during the Han dynasty (漢朝) (206 B.C. - 220 A.D.). The bamboo slips - on which the text has been written - have been dated to originate from the state of Qi (齊) that existed during the Warring States period (*Yinqueshan hanmu zhujian zhengli xiaozu* 1985, p. 31).

In another textual source, named *Guanzi* (管子), that derives from the 7th century B.C., it is stated that in the cities and villages there should always exist marketplaces. These were the locations where commerce was centered in, and thus were deemed essential for the survival of the local communities (Yates 1997, p. 86). Yet, for the difficulties in gaining access to such materials as the aforementioned ones, I have decided to leave them aside to only perform as supplementary sources for this thesis. I rather engage into analyzing their contents in some other research. I have concentrated, instead, on the actual money and coin findings. Therefore, I use the modern literature and archaeological findings as my main sources.

Before proceeding any further in this thesis, it is important to remember that in this chapter the coins are often referred to by using two different names/terms. The *banliang* (半兩) coins are the coins that were minted in the Qin state while the "(round) coins/coinage" refers to any round coinage in general, including the *banliang* coins and other round coinage of the Warring States China. With the aforementioned in mind, it is now time to move into introducing some problems and controversies that have emerged in various contemporary literary sources as to the dating of the earliest round coins of China. Later on, once that has been done, also some relevant archaeological findings are delved into.

2.1 - The Contemporary Research Literature

The contemporary research literature on the topic of the early money and round coinage of China combines information from archaeological research, historical textual materials and other contemporary research materials. Currently, there exist three prevalent theories/opinions as to when the round coins in China were first minted. These theories have been derived either from archaeological or ancient literary material or both. The most commonly used theory is that the first round coins of China were minted in the year 336 B.C. or not many years before that. The second theory places this to earlier in the 4th century B.C., and the third one places the date even further away, beyond the 4th century B.C., and some sources refer to two of these dates being possible.

The theory of the first Chinese round coins having appeared in the year 336 B.C. has its origin in the book named *Shiji* (史記) - also known as the *Taishigong shu* (太史公書) and the "Records of the Grand Historian". The book was written during the first half of the Han dynasty by historian Sima Tan (司馬談) (165 - 110 B.C.) and his son Sima Qian (司馬遷) (c. 145/135 - 86 B.C.) who finished the book. The work is an important source of knowledge in terms of researching the Warring States period of China, as well. Although, the contents of the book have probably changed over time and new material has been added (Hulsewé & Loewe 1979, p. 3 - 25). Many historians also question the reliability of the information that has been stated in the book (Pines 2005/2006).

What makes the information in the "Records of the Grand Historian" very important in terms of this research is the text written in it in the Table (表) 15, named "Yearly Chronicle of the Six States" (六國年表) (*Shiji* 6:282). The text states that 'in 336 B.C., the Zhou congratulated Qin on issuing coins' and that 'Qin started the issuing of coins in 336 B.C.'. Unfortunately, the case is not as forthright as it might seem in the first glance. The problem is that the text does not mention that the coins in question were round in shape. Furthermore, the text does not say anything about the coins of similar shape not being minted before the new type of coins that was started to be issued in 336 B.C. in the state of Qin. There are also other ambiguities in the theory. One of them is the lack of archaeological

evidence that could either refute or back up the theory that the year 336 B.C. was the year when the state of Qin first started to issue its own coins, (Peng 2000, p. 157 - 158) not to mention the first ever round coins in China.

Only one of the contemporary books that were used as a source in writing this research, and are referring to Sima Tan or Sima Qian or the year 336 B.C. and the *Shiji*, has any reference to the exact chapter where the original text can be found within the *Shiji*. That one book is the "*Chinese History: A New Manual*" (Wilkinson 2013, p. 566). If it was not for reading the "*Chinese History: A New Manual*", I would have possibly had to use some non-scientific source in order to find out where exactly one can find the original text on coins and minting in the *Shiji*. In addition to that, none of the contemporary books, not even the aforementioned one, present any citations from the *Shiji*, either in English or Chinese to elaborate their interpretation of the text. Besides of the dubious references to the *Shiji*, there exist various other problems and ambiguities when it comes to what researchers and authors have written on the earliest issuance of the Chinese round coinage. In this chapter a few of them have been explained in order to highlight this issue. Those referring to the *Shiji* have been explained first.

In the book "*The First Emperor: China's Terracotta Army*" (Wang 2007, p. 80) (editor: Portal, J.) Wang writes that Sima Qian wrote in the *Shiji* that the Qin state issued coins in 336 B.C. and adds that Sima Qian had listed the standardization of coinage system as one of the achievements of the first emperor of China after 221 B.C. when China was united under the Qin dynasty (秦朝) (221 - 206 B.C.). Wang states that as many "coins" (it is not sure if that means round coins or also other types of bronze currencies) have been excavated and dated archaeologically to times before 336 B.C., Sima Qian must have actually referred to a new type of coinage, a reform of the existing coinage or a shift to state monopoly on coinage. She asserts that as the state of Qin expanded its territory the state's *banliang* (半兩) type currency (a round coin type) was distributed further and was later declared a standardized currency of the Qin dynasty as the dynasty was formed by the Qin state. Wang writes that the standardization of the *banliang* as the empire's main form of money "was not merely for economic convenience" but to carry out "effective running of the state administration" and also for "politically symbolic" reasons.

Likewise, Peng has written in his book "*Coinage and Commercial development in Eastern Zhou China*" (Peng 2000, p. 150 - 151) that it is recorded in the *Shiji* that the state of Qin started to make "coins" in 336 B.C. He refers to some Warring States period archaeological material and research and states that according to that material some numismatists believe that the *banliang* can be dated to "as early as 336 BC". He concludes by expressing that the Qin state's *banliang* coins can therefore be dated to derive from between 336 and 221 B.C. (he does not specify this assumption any further). Unfortunately, despite the dating of the aforementioned archaeological contexts, they can only be used in researching *banliang* coins. They cannot prove anything on behalf of the first date of minting Qin state or Chinese round coinage having taken place in 336 B.C. or even during that decade. Unlike many, however, Peng does not claim the *banliang* coins to be the first round coinage of China.

Similar uncertainty in dating of the first round coins of China is expressed by von Glahn as he uses the word "probably" in his book "*The Economic History of China: From Antiquity to the Nineteenth Century*" (von Glahn 2016, p. 62) while dating the earliest *banliang* coins to around 335 B.C. (that is one year later than 336 B.C. that is often referred to). He even writes that while the states of Qi and Yan started to mint different types of round currency, the state of Qin's *banliang* coinage was the first form of round bronze coinage. He does not express clearly if he means that the *banliang* was the first ever round bronze coinage in China or such only in the state of Qin.

In the book "*Chinese History: A New Manual*" (Wilkinson 2013, p. 566), the scope of possible dating of the first round coinage of China is wisely expanded into a bit wider span of time. In the book it is stated that the "spade and knife money were replaced by round coins of various denominations". It is continued by stating that these coins were made from alloys of copper, lead and tin, and that they were present in many different locations "by the late fourth century BCE". In addition to this, on the same page it is written that the *Shiji* states that the year 336 B.C. was the year when the first Qin state bronze coins were issued. And unlike the other books that I have read, this book gives a reference to the chapter 6:282 of the *Shiji* where such statement has been made.

I find the way that the "*Chinese History: A New Manual*" discusses the aforementioned issues to go very well hand in hand with the fact that there

exist no certainties when it comes to determining the place of origin and dating of the very first round coinage of China. It is also evident that the round coinage of the Warring States period came in many forms and that they were minted and circulated in many states. There also exists no evidence of the Qin state round coinage being the first ever round bronze coinage in China.

When it comes to the *banliang* coins, it is explained on page 566 of the "*Chinese History: A New Manual*" that through archaeological findings and research, that has taken place since the middle of the twentieth century, it is revealed that the state of Qin started to mint the *banliang* coins from the beginning of the Warring States period and consecutively spread them to other parts of China as the state expanded its territory. Unfortunately, the exact date of the beginning of the Warring States period is not defined in the text, and there exist many definitions as to the beginning of the Warring States period. However, in the "*Chinese History: A New Manual*" itself it is stated on page 689 that the modern convention often regards the year 475 B.C. as the beginning of the Warring States period, although the years 481, 468, 453, and 403 B.C. have also been used.

Despite all the controversies and ambiguities that are prevalent regarding the dating of the inception of the Qin round coinage (not to mention the Chinese round coinage in general), there exist statements without any reference to prove its factuality. One example can be found in the book "*The Archaeology of Early China: From Prehistory to the Han Dynasty*" (Shelach-Lavi 2015, p. 314) where it is stated that "the most common coin minted by the Qin Empire was the *banliang* (半兩), which the state started to mint in 336 BCE". This statement seems to be a strong claim or statement without any proof to back it up with. At least there is none presented in the book in which it was stated.

Fortunately, there are good examples of how to treat the issue of the minting of the first Chinese round coins and the *banliang*. In the book "*Rome and China: Comparative Perspectives on Ancient World Empires*" (Scheidel 2009, p. 140) (editor: Scheidel, W.), it is written that according to the archaeological findings the "round coins" first appeared in the states of the central Great Plain in the fourth century B.C., and from these states the idea of using round coins spread into other states, except for the state of Chu in the south. It is also written that the

coins were probably modeled after the jade *bi* discs (璧). It is stated that the round coins were cast according to regional weight standards and often had a denomination or the name of the casting city inscribed on them.

What is very important in the very same text is the statement that says that the state of Qin followed the *liang* weight standard (兩) upon casting the *banliang* coins with the target weight of approximately 8 grams, and that the weight was inscribed on the face of the coins. It is also stated that "the later texts" (I am not sure what "the later texts" refers to) have claimed that it was the first emperor of China, Qin Shihuangdi (秦始皇) (259 - 210 B.C.) who created this coin type in 221 B.C., which is the year of first unification of China and the end of the Warring States period. It is continued by explaining that this information is an "erroneous conflation of the later imperial predominance of this type of coin with the circumstance of its creation". This aforementioned "erroneous conflation" is corrected by explaining that the *banliang* coins have been dated archaeologically to times over one hundred years prior to the unification of China. It is also stated that these coins existed during the times of "profound state-sponsored changes" and that the state control that was exerted over this currency was possibly initiated from the legalist reforms of the 340's and 330's B.C. that took place in the state of Qin.

The aforementioned text written on the page 140 of the book "*Rome and China: Comparative Perspectives on Ancient World Empires*", unfortunately, does not give any references to the archaeological research material that reveals, according to the book, that the origin of the round coinage of China is in the fourth century B.C. central Great Plain. On the other hand, the book succeeds in showing that the assumption of the *banliang* coins being minted for the first time in 221 B.C. is an erroneous "conflation". This is done in the form of an excellent reference footnote number 12. The footnote states the following:

> "Thierry 1997: 165-75. In 336 BCE, the Zhou congratulated the Qin on issuing coins; but it is a modern presumption that this marks the *first* issue of such coins at Qin: Peng 1994: 76 n.2; Thierry 1997: 173. For Shang Yang's reforms, see Li 1977. Thierry 1997: 173-75 distinguishes among seven types of Qin *banliang* coins. The oldest *banliang* coins (c.370s-340s B.C.E.?) are large and heavy (usually in excess of 10g) and feature more "archaic" round holes. The most regular issues (7-10g) may date from the Shang Yang period. Underweight

> specimens from the late Warring States period dominate the archaeological record."

In this case much skepticism and uncertainty is indicated regarding the dating to the year 336 B.C., and the possible date is expanded by circa 40 years, which is probably very smart given that there is no certainty as to when these coins were first minted and what the so-called congratulation on the issuance of the coins refers to exactly.

Hartill places the date of the first *banliang* coins to even earlier back in history. He writes in his book "*Cast Chinese Coins: A Historical Catalogue*" (Hartill 2005, p. 83) that the state of Qin was the first state to issue the *banliang* coins. He states that this happened during the Warring States period, possibly as early as 378 B.C., and that this information is revealed by the archaeological evidence. Unfortunately, in the book there are no any sources given to explain the origin of the possible dating of the first round coins to the year "as early as 378 BC". It is not made clear which archaeological evidence he is referring to. In addition to this, in the same book, Hartill has categorized the coins and given them dates. Three of these categories are relevant to this research. Unfortunately, he has not given any sources for these dates, and they seem to be only rough estimates. The categories and their dates are I & II: "Zhou Round Coins: Early Round Coins (350-220 BC)" (two different categories in Hartill 2005, p. 80 - 81) and III: "Ban Liang Coins: Pre Qin Type (350-300 BC)" (one category in ibid., p. 83).

In dating the earliest round coinage of China, perhaps the most bizarre and unreliable of the sources used in this research is the one by Brooks & Brooks, as they mention in their book "*The Emergence of China: From Confucius to the Empire*" (Brooks & Brooks 2015, p. 44) a rather unclear - even bold - statement of all the round coinage of Eurasia having been derived from the Lydian coins. They begin to approach the topic by writing:

> "A tale about a minister protesting the Jōu issuance of heavy coins …"

In the book the sentence is actually cut short with three full stop marks in order to be continued later. Before finishing the sentence they first continue by quoting a very old Chinese text named *Guoyu* (國語) - abbreviated GY - that originates from around 300 B.C.:

> "**2:10** (GY Jōu 3:5, excerpt, c0300). In the 21st year of Jing-wáng, they were going to cast large coins 大錢. Shàn Mù-gūng remonstrated, saying, It [sic] should not be done. In antiquity, disasters from Heaven came down, and they then … adjusted the ratio between light and heavy, to aid the people. When the people's worries were light, they made heavy coins."

Having written this they proceed to finishing the earlier sentence that was cut short with three full stop marks:

> "… is surely a fable, but the year in which it is set (0524) is not implausible."

For the above statement they have written a reference to a footnote (#19). The footnote states the following:

> "All round coins throughout Eurasia derive from those of Lydia (c0630). Early heavy coins were better suited for capital transfer than for ordinary buying and selling."

The aforementioned statement is a very bold one and no proof of its factuality is given within the book. It is also questionable if the quoted text from the *Guoyu* even refers to the round coins. The spade and knife moneys also reduced in size and weight during the entire span of the Warring States period, (Hartill 2005) as I have demonstrated in Chapter 1.2 of this research, so the alternatives to the aforementioned larger currency could have also been some of them. It is also highly questionable to take the statement "All round coins throughout Eurasia derive from those of Lydia (c0630)" seriously, as this is a question that remains still to date unanswered even by researchers well versed in the field of numismatics.

Unfortunately, there seem to exist no exact dating in the light of archaeological sources, either, as to the earliest appearance of round coinage in China. However, it is quite reliable to state that the contemporary archaeological research has succeeded in attesting that the earliest round coinage of China appeared somewhere in the Central Plain area (中原) during the 4th century B.C. (Scheidel 2009, p. 140). In spite of this, it is possible that new discoveries are made in the future, and that those will be attesting contrary to the current knowledge.

In spite of all of the ambiguities and difficulties that this topic holds within, one can assert that the first minting of the round coinage in China

probably happened only after the Spring and Autumn period, sometime during the first half of the Warring States period. It is for this reason that I have concluded in regarding the 5th - 4th century B.C. as the likely centuries when the round coins were first adopted into the Warring States period economies. This is for the reason, as has been demonstrated in this chapter, that most of the research material that has been used in this research on the Eastern Zhou period coinage also place the date to somewhere around the aforementioned period of time. Furthermore, what makes this conclusion more likely to be coherent with the reality is that during the 5th - 4th century B.C. many of the states of the Warring States period China went through economic reforms (von Glahn 2016, p. 60 - 66). The nature of these reforms is explained later, throughout Chapter 3.

Finally, as a conclusion to the dating of the earliest round coinage in China, in this research most of the attention is given to the turn of the 5th and 4th centuries B.C. - in addition to the Ming dynasty - as this was roughly the period during which the round coinage first appeared in China. Some of the relevant archaeological contexts from which the early round coinage of China have frequently been found are discussed next.

2.2 - The Early Round Coinage in Archaeological Contexts

In addition to the textual materials that derive from the Warring States period and the times that follow soon after it, there are multiple archaeological resources that can be utilized in researching the early Chinese moneys and coinage. (See **Map 2** on page 60 for the archaeologically discovered Warring States period cities). As the contemporary scientific literature on the early Chinese moneys, coinage and monetary politics in general has already been taken into account in this research, it is now necessary to concentrate more directly into some of the relevant archaeological materials, their contextual information and what they can reveal in terms of the early Chinese round moneys and coinage. It shall be demonstrated

that as for the usage and adoption of round coinage in China, many ambiguities and unanswered questions exist despite the multitude of archaeological studies. The materials can, nevertheless, reveal a myriad of useful information in terms of the research subject of this thesis.

To begin with, it is evident that there exist many archaeological findings that can be both dated to the Warring States period and also relate to the economic development of the states' ecopolitical aspects during that period. Excellent examples of the types of findings that relate directly to the round coinage are the coin casting molds and dies. These are often found where coin minting workshops used to exist. Many such sites dating to the Warring States period have been found all around China (Emura 2005, p. 76). The money mold, with those dedicated to manufacturing round coins included, evolved over time. The molds and dies were designed to be used efficiently and multiple times, as well as to guarantee better coin consistency, (Hartill 2005, p. xviii, 73; Peng 2000, p. 161 - 170) which are all pertinent to the mass production of currencies. High quality molds and dies also allowed for a higher degree of standardization of money and coin production (Zheng 1987, p. 37). I believe that this was important especially in the states where the material aspects of the moneys and coins were regulated by the government.

It is not uncommon for the different currency types of the Warring States period to be found together within the same archaeological context (Hartill 2005, p. 82). In this chapter, most attention is paid to the money and coins that have been found in tombs. This is for the reason that tombs are among those contextual types that have been researched extensively. They also tend to be so-called closed contexts, which means that once the tomb has been sealed, it has not been disturbed or altered, and the material within form a "time capsule" to a certain period in history - at least in an ideal situation. Tomb findings can also shed good amounts of knowledge on the purpose and importance of the early Chinese money and round coinage to the people of the Warring States period. The moneys and coins were buried in tombs due to the religious and other cultural significance that they bear to the people and the society that used them.

The archaeological contexts can be divided into different categories. When it comes to the burial contexts, they are usually divided into the commoners' and elites' contexts - the division being related to both monetary wealth and

hierarchical status. This is done partly for research specific reasons. The division is necessary also for the purposes of this research for the fact that it makes understanding of the differences between the elites' and commoners' lives possible. However, archaeological categorical divisions can at times be quite generalizing and simplistic in their nature. This is also the case when it comes to dividing people into the categories of the commoners and the elites. In spite of this, the division is necessary in conducting and managing successful studies between different social classes - a division which manifests itself in terms of material culture and wealth, as well.

The Warring States period region of Jinan (濟南), a part of the state of Qi (齊), is an excellent example of the differences between the elites' and the commoners', or (roughly expressing) the poor and the rich, or the politically insignificant and the politically important people's material burial customs. These remains can, to some extent, provide new information as to what kind of things the elites and the commoners held in high value or importance during their lives - in both this realm and the next. In the Warring States period archaeological contexts of Jinan one can see a distinction between the material burial customs of the elites and the commoners. (Li 2000) Concentrating on the issue of moneys and coins in the Jinan's burial contexts, one can see that there has been found only one Warring States period tomb that contained any currency. This tomb belonged to a member of the so-called elite. A little further in time, to the times of the Western Han dynasty (西漢) (206 B.C. - 9 A.D.) (the former part of the Han dynasty), in the same region as many as 24% of the tombs contain currencies - a marked increase in the prevalence of the currencies buried in tombs. Those tombs belonged to both the commoners and the elites. (ibid., p. 41)

Therefore, in the first glance, according to the burial findings it would seem that in Jinan the belief of the usefulness of the bronze currencies in the afterlife had expanded in its prevalence, and also became part of the commoners' culture between the latter half of the Warring States period and the early half of the Han dynasty. And as the society of the Han dynasty continued the expansion of monetization that had started during the Eastern Zhou period, (von Glahn 2016, p. 100) the increased prevalence of bronze currencies as tomb offerings could be just one part of the general monetization of the Han culture.

However, the issue is not that straightforward, for the burial contexts do not reveal everything about the people's monetary habits and policies. This can be witnessed, for instance, in that the large knife money types of the state of Qi, or *dadao* (大刀), have been found in great numbers from the money hoards and settlements in the Jinan region and elsewhere in the state of Qi, but not in the burial contexts. Also the round coinage types of the state of Qi are present in abundance in the hoard and settlement contexts, but not in the burials. At the same time, the smaller knife moneys of Qi are found in both of the aforementioned context types in Jinan and elsewhere in the State of Qi, as well as within many of the tombs outside the area of Jinan. The lack of some item type in burials does not necessarily imply that the item type was not important in the people's mundane and daily life. Instead, it is likely absent in the tombs for the reason that the item was not deemed useful in the afterlife. (ibid., p. 17 - 18, 20, 22, 44 - 48, 72)

In the case of the currencies found in Jinan, the aforementioned lack of the large knife money and the round coinage types in the burial contexts can be explained with the rarity of those currencies in the interstate trade. Even though they played an important role in the local economy, they were still deemed useless in the afterlife due to their domestic area or circulation. As for the smaller knife moneys, they were used in international trade and thus were deemed useful also in the afterlife, as one also crosses a kind of border or boundary to get there upon death. This kind of trend of utilizing only certain kind of currency as a burial offering can also attest to the state's exertion of control over its currencies' value as well as their functions in trade and commerce. The belief that such control was extant or absent in the afterlife can manifest itself through the presence or lack of certain currency types among the tomb offerings. (ibid.) I also argue that the aforementioned absence of the round coinage in the Jinan tombs can further attest to the intrastate nature of the round coinage of the Warring States period (Kakinuma 2014, p. 110 - 111). As for the large knives of the state of Qi, it is known that their circulation was confined mainly to the state where they originated (Hartill 2005, p. 54; Peng 2000, p. 197 - 199).

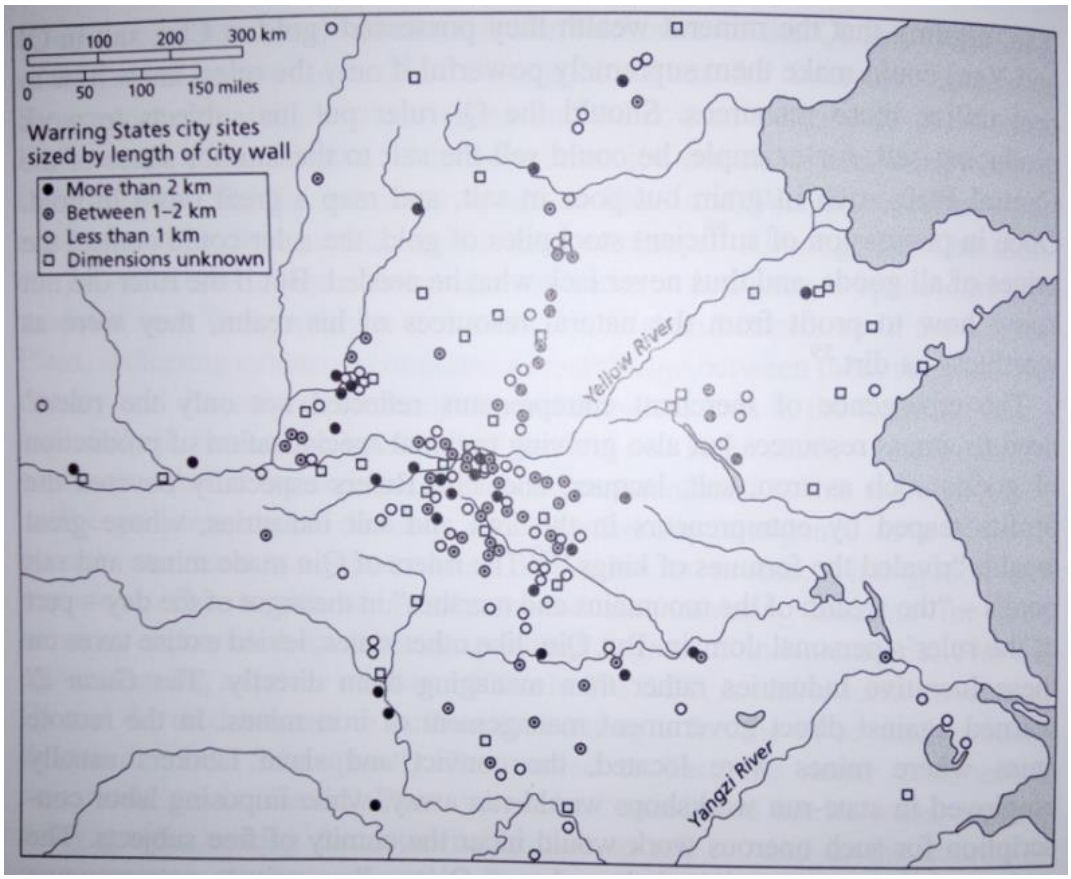
In spite of all the uncertainties that surround the exact reasons as to the adoption of round coinage during the Warring States period, I argue that it is possibly that the lesser value as well as the importance of the round coins is also attested in that they are usually very numerous, often even the most numerous of

all the currencies that are found within the same archaeological context of the Warring States period. It seems that the situation was the same regardless of the state. This can witnessed in the following example findings that have been made within an area that spans many states (I have mentioned the modern province within which the place is located). To begin with, an excavation that was carried out in the Liaoning province (遼寧) in 1984 yielded a total of 2280 round coins, 14 spade moneys, and 120 knife moneys of medium size. Likewise, another excavation, carried out in Shandong (山東) in 1960, provided a total of 602 round coins and 59 large knife moneys. In 1976 a finding was made in the Henan province (河南) that included 116 spade moneys, of various types and 47 round coins. In addition to the aforementioned findings, in 1981, also in the Henan province, a money hoard was found. It contained 3537 small spade moneys that all belonged to the same type, 29 other spade moneys belonging to three different types, and 1180 round coins of the same type was found. (Hartill 2005, p. 36, 82) From the state of Qi (齊), present-day Shandong province, there is a finding that contained 243 round coins and 294 large knife moneys in a hoard. In another excavation of a money and coin hoard, also within the borders of the state of Qi, there were 82 round coins and 5 large knife moneys that were found. (Li 2000, p. 17 - 18, 72) Also, it was a common practice to store the coins into stacks of 1000 called *ben* (畚) (Scheidel 2009, p. 142; Wilkinson 2013, p. 566).

In my opinion, the relatively lesser amount of the physically large and medium sized currencies that are found together with the larger amount of physically smaller currencies can attest to two things. First, it reveals which currency types were important in the given location. Second, the aforementioned relative quantities can attest to the lesser value of the round coinage in comparison with that of the larger ones, which means that they were well suited for daily purposes, or purchases of small value. This kind of difference between currencies' functions can also be observed within the monetary practices of the Ming dynasty (Wu [chief editor] & Yu & Yu 2004, p. 5). For instance, the Ming Empire's soldiers were paid in silver that they could exchange into bronze coins. As the bronze coinage was the less valuable of the two currency types, and thus more adequate for the handling of small purchases, they used bronze coins in procuring their daily necessities. (Kuroda 2005, p. 75 - 76) Additionally, it is known that

during the Eastern Zhou period silk, hemp and grain currencies could be exchanged into bronze currencies, (von Glahn 2016, p. 98; Lewis 1999, p. 606 - 607; Wilkinson 2013, p. 565) and I find it highly likely that all the Eastern Zhou currencies of larger denominations could also be exchanged into those of smaller denominations and vice versa. As has been explained in Chapters 1.2 and 1.3, another important aspect pertains to the differences in the physical properties of the currencies. In other words, due to their larger size, it is also reasonable to believe that the Warring States period knife and spade moneys had more value than the round coins, and thus were generally adequate for different purposes than the round coins.

The topic of this research now shifts from archaeological contexts into the monetary economic and societal aspects of the Eastern Zhou period and the Ming dynasty, upon which the adoption of round coinage during the Warring States period of China will be reflected.



Map 2: The archaeologically discovered Warring States period cities.
(von Glahn 2016, p. 66)

Chapter 3

The Society and Monetary Economics of the Warring States Period and Ming Dynasty

Many questions still remain as to the reasons behind the adoption of the round coinage, as well as to the reasons behind the differences in shape, size and material of the many moneys and coins of the Warring States period. The questions, why did the states adopt round-shaped coinage with reduced size and weight (in comparison with the other money types in circulation at that time) into their monetary economies, and why did most of the Chinese states go through an acceleration of monetization during the Warring States period, will be discussed further in this chapter. In addition to this, it will be discussed if it is possible to study the Warring States period through the knowledge about Ming dynasty, and if that can provide any information on the fundamental reasons as to why the Chinese started to use small coinage alongside other forms of currencies during the Warring States period.

The Warring States period of China witnessed a myriad of technological, economic, and ideological innovations that were new to the Chinese cultural sphere of the time. Most of them had started to take shape already during the Spring and Autumn period, while some only formed during the Warring States period. The ever increased size of the armies and the ever intensifying pace of warfare between the separate, competing states played a pivotal role in pushing the states into developing their local trade and economy. This was due in order to enhance the independence of the various locations inside the “Seven Warring States” (there remained only seven dominant states by the beginning of the Warring States period - hence the alternative name the “Seven Warring States”), and it took shape for large part in terms of gathering war funds and producing food and other necessities for the tax paying people and the military (von Glahn 2016, p. 73; Hsu 1965; Hui 2005, p. 171, 226; Kakinuma

2014, p. 90 - 91; Li 2000, p. 26 - 28). In order for this to have succeeded, it was necessary to create a semi-monetized economic system which involved the inception of the government controlled bronze currencies (Kakinuma 2014, p. 113, 116 - 117) (See **Picture 1** on page 10 for how different bronze currencies look like).

Before one can delve any deeper into the aforementioned issues, one must first understand some fundamental characteristics of the political and economic circumstances that were prevailing during the Western Zhou period, the Spring and Autumn period, and the beginning of the Warring States period. As was already explained in Chapter 1, the Western Zhou period is the first half of the Zhou dynasty. It was rather coherent in terms of power being centered into the hands of one ruling royal family that commanded its subjects, which were scattered around the empire in different fiefs. These fiefs were ruled by the local nobility. They all paid provisions and conducted services to the royal Zhou family, which resided in the capital city. In other words, the Western Zhou Empire was ruled in a manner that was quite similar with that of the medieval Europe: people belonged to the lord of the land where they lived in, and there existed no such thing as commoners having a right to private ownership of land. The peasants were required to provide their lords with grain and other products, and partake in annual corvées (conscript labor). The lord, in return, provided the peasantry with what they needed in order to survive. It was out from these provisions that the regions paid their share to the royal family and the state. (Fu 1981; Shaughnessy 1999, p. 292 - 351)

The power of the Western Zhou royal family trembled at the end of the period, which led to the beginning of the Eastern Zhou period (東周) (771 - 256 B.C.). This period is further divided into two periods, the Spring and Autumn and the Warring States periods. The Spring and Autumn period saw a gradual shift of power from the royal family to the hands of the regional lords, other nobles, and ministers who often competed with one another (Hsu 1965, p. 24 - 52). Wars between these rivaling rulers were commonplace, and the Zhou family had practically no power over its subjects (who were actually no longer their subjects, except in nominal terms). It was already during this era that the mode of ruling these new-born states started shifting from feudal to more laissez-faire in terms of

peoples' ability to choose more freely over the aspects and directions of their own lives.

These changes were in relation to the division of people into social classes. The concept of "four occupations" or *shinonggongchang* (士農工商) appeared around the turn of the Western Zhou and the Eastern Zhou periods. It meant that the people of the empire were divided into four different categories that represented the social and political ideological social classes. Starting from the highest to the lowest social status, those classes were: 1) *shi* (士), the gentlemen/scholars/intellectuals/lower level aristocrats (who were commonly responsible for the administrative responsibilities of various levels and sorts); 2) *gong* (工), the artisans and craftsmen; 3) *nong* (農), the farmers; 4) *shang* (商), the merchants. The division functioned primarily at nominal and ideological levels, as great variation on the actual social status and the economic affluence existed between the people within the same "occupation". (Barbieri-Low 2007, p. 36 - 37; Hansson 1996, p. 19 - 20; Smith 2008, p. 12)

In reality, more than just four "occupations" or social statuses existed in the Eastern Zhou period China. Furthermore, one's social status was generally not dictated by one's family background, in spite of the sociopolitical ideology that suggested otherwise. Even the highest class among the hierarchy of the four occupations, the *shi*, was not inclusively an inherited title. One could, instead, be raised into the *shi* status from a lower class, given that one had proven to be worthy of such promotion through education or appropriate demeanor. The *shi* as well as their expected values were the cornerstones in the rise and continuation of the Chinese intellectual, as well as the state administrative culture of the time. (Barbieri-Low 2007; Hsu 1999, p. 583 - 584; Ebrey & Walthall 2013, p. 20 - 35; Ge 2015, p. 16 - 22; Lewis 1999, p. 604; Nivison 1999, p. 748; Smith 2008, p. 12; Sterckx 2015; Tian & Zang 1996, p. 303; Yan 2014, p. 186; Yang & Li 1955/1977, p. 91).

Many occupations and social classes were excluded from the categorization into four occupations. One good example of such are the military professionals (Cao 2001, p. 215; Peng 2000, p. 236) that first emerged during the Spring and Autumn period (Lewis 1999, p. 621). While some positions, such as that of the scribe/astrologer, *shi* (史), still remained largely hereditary, they too

went through radical changes in their structures, such as becoming more demanding in terms of learnedness, for example (Harper 1999, p. 813 - 815).

In general, the main reasons behind the implementation of the changes in the states' social structures and the loosening of the states' authority over their subjects were to increase the productivity of the peasantry and to transform the society into a more market-centered mode of economy (Hsu 1999, p. 577; von Falkenhausen 2017; Shen 2003). As a consequence, the peasants were no longer serfs (or something rather close to that status) to their lords and local nobility - although, the status of the peasantry had perhaps been closer to tenancy than contractual servitude to their lords (Hsu 1999, p. 576). Commoners now had more freedom in terms of, for example, resettling from one place to another or changing their profession (Shen 2003, p. 294). The changes also included the opening up of freer, less state controlled trade. In other words, during the Eastern Zhou period, the Chinese states went through the development of market economy that became the basis and new economic model of the states. This also included the development of privately run industries. (von Falkenhausen 2017; Shen 2003)

During the Eastern Zhou period, also the independent merchant class strengthened in terms of its social and economic importance - one could even say that it was born for the first time in the Chinese history (Hsu 1999, p. 582; Yates 1997, p. 87). In spite of the general trend of the Eastern Zhou period being towards increased influence of the merchants in the forming of the societies' economic wellbeing, their actions were sometimes impeded and they were occasionally regarded as a despised and inferior class of people, while farmers were regarded with high respect (Lewis 1999, p. 613; Lin & Peach & Fang 2014, p. 15 - 16; Yang 1970, p. 187 - 188). In spite of this, merchants were necessary for the states' survival as they were one of the key components in increasing and upholding trade and commerce. Trade and commerce, in their turn, were taxed by the state, which granted it the necessary wealth (von Glahn 2016, p. 73). However, in addition to this, eventually the states started to realize that unchecked market economy created inequalities, and thus implemented more state control and monopoly over commerce (von Glahn 2016, p. 74 - 81).

The states' military, agricultural, and economic power and productivity depended on the manpower that the state could gather up and manage to perform and fulfill the necessary works. Therefore, when manpower was sparse,

foreign immigration could be attracted to the state through various means and incentives. In general, as had been the situation already during the Western Zhou period, the state practically still often provided the peasantry with the land to cultivate and live in, and continued to force them to take part in annual corvées - that were usually construction works. Taking part in corvées (in addition to fulfilling the military services and paying taxes) was one of the requirements that one would have to meet in order to be given the right to own land and receive land grants. The concept of peasants owning their own land was put into common practice starting from the 4th century B.C. onwards. Whatever the possibilities may have been for the peasants to choose from, it was nevertheless made complicated for them to leave the area they either owned or were given. This was done through obligations to be registered as a citizen to a certain place. (Feng 2014, p. 239; von Glahn 2016, p. 97; Hsu 2012, p. 105; Hui 2005, p. 171; Lewis 1999, p. 621, 645 - 646, 649)

Occasional shifts towards social equalization were not the only changes that happened during the Eastern Zhou period. The states' infrastructure changed as well. For instance, transportation networks expanded as new cities were built and the old ones grew in size. Also new garrisons were built. The population grew despite an almost constant war between the states. All in all, most of the societal and economic changes that happened during the Warring States period can be regarded as "Self-Strengthening Reforms" as opposed to the "Self-Weakening Expedients". As the terms themselves already refer to, the changes were strengthening in terms of them building more governmental sovereignty, political power and economic affluence to the states. (Hui 2005)

It is also necessary to acknowledge that despite their many similarities the states that existed during the Spring and Autumn and the Warring States periods were not entirely similar with one another in their political, societal and economic policies. Just to give an example of such differences, the states that existed in the middle parts of the so-called Seven Warring States - the most powerful states of the Warring States period - granted their subjects more freedom in terms of merchant and peasant classes being able to perform their commerce and trade without strict governmental control. At the same time the states that existed in the periphery areas of the aforementioned Seven Warring States were much more prone towards total state control. (von Glahn 2016, p. 72)

Whatever the life of the people was like during the times of peace, one cannot ignore the cruel fact that during the Eastern Zhou period, and especially during the Warring States period the states waged constant and intense wars between one another. There was a war on average every 1.7 years during the Eastern Zhou period (a total of 256 wars). If only the last 130 years of the Warring States period are included in the calculation, the figure is 1.4. (Wilkinson 2013, p. 689) The armies of the Warring States period were ten times larger than those of the Spring and Autumn period. The armies did not only become larger over the Eastern Zhou dynasty, but they changed into standing armies. (Peng 2000, p. 236) Furthermore, also the military technology and strategies evolved significantly, and the duration of the military campaigns extended during the Warring States period. (Pines 2012, p. 15; Sanderson 2018, p. 211) The increased size of the armies was achieved by conscripting large amounts of commoners to function as the backbone of the armies, while during the Western Zhou period and the early Spring and Autumn period the armies' main battle units had been the chariot-riding nobility, but they became obsolete during the Warring States period (Lewis 1990, p. 54 - 55; Lewis 1999, p. 621). With the large conscription armies, longer military campaigns, and advanced military technology at disposal, the amount of casualties of war increased (Pines 2012, p. 15; Sanderson 2018, p. 211 - 212). It is also noteworthy that, in addition to the conscripts, the professional class of soldiers arose during the Spring and Autumn period (Lewis 1999, p. 621; Peng 2000, p. 236).

Eventually, the Warring States period ended into the Qin conquest of other states. After over a decade of waging wars of conquest, the state of Qin took over the other states with amazing political wits as well as its very functional economic, societal and military reforms. It was also due to the rather faraway location of the state from the epicenter of fighting that enabled the Qin to gather its strength in relative peace, and expand its territory into then non-Chinese areas that were situated south from its borders, namely, the contemporary Sichuan province (四川) and some areas around it. Those areas were important in terms of Qin's economic independence, for they boasted significant natural resources. Eventually, aided by the aforementioned resources, the Qin took over all of the then-known China. It was in 221 B.C. that the conquest was complete and hence

the first truly unified dynasty of China, the Qin dynasty (秦朝) (221 - 206 B.C.), was born. (Kakinuma 2014, p. 113, 116 - 121)

After the Qin's unification of China, even more drastic changes were witnessed in terms of the monetization of the Chinese society. During the Ming dynasty (明朝) (1368 - 1644) - around one and a half millennia after the Qin dynasty had came to its end - the empire ushered in economic reforms that expanded the monetization into every social and economic levels of the Ming society. These reforms were carried out in an unprecedented scale in the history of China, being overwhelmed in magnitude only during the 19th century, or during the Qing dynasty (大清) (1644 - 1912). (Brook 2010, p. 119) From the 14th and 15th centuries onwards the Ming Empire started to reduce the amount of grain that was needed in paying its officials' salaries. The reduction was achieved by paying parts of the salaries in bronze coins and silver ingots. That was done as to reduce the general demand for grain, but also in order to reduce the volume of grain that had to be transported over long distances within the empire from the warm and fertile south to the cold and arid north. (Chan 2007, p. 249 - 250)

The monetization of the Ming society expanded even further during the 16th and early 17th centuries when the economic reforms that go by the name Single Whip Reform (一條鞭法) were implemented and promulgated. One of the most prominent aspects of the reforms was the conversion of taxes to be paid in silver instead of grain. The taxation reform applied to most of the land taxes, labor services, and various extra levies. (Atwell 1998, p. 400 - 405) Other integral parts of the Ming dynasty's monetary economic reforms were the industrialization of the commodity items production and the general commercialization of the countryside (Heijdra 2007, p. 496 - 516).

Silver played the key role in the Ming's socioeconomic growth, yet also bronze coins were used extensively, and were valid for paying such things as fines and taxes (Shan 2015, p. 236). The bronze coins were an important part in the empire's monetized market economy that mainly relied on the bipartition of the currency system between the silver and bronze currencies. While silver had a large value, the bronze coins were especially useful in the daily commercial activities that required a currency of lesser value in order to function properly (Atwell 1998, p. 400 - 416; Kuroda 2005, p. 75 - 76). Using bronze currencies has

a long history in China, but how about silver? Using silver as a form of currency was nothing new in China even prior to the Ming dynasty or the Single Whip Reform, for small amounts of silver ingots had been manufactured already from the Spring and Autumn period onwards (Scheidel 2009, p. 169; Yao & Wang 2003, p. 22). However, silvers' ubiquitous functions in a monetized economy are something of a Ming innovation (Atwell 1998, p. 381 - 388).

The aforementioned aspects are the primary reason as to why I have resolved to utilize the Ming dynasty as an analogical tool for this thesis. On the other hand, why not use some other era or dynasty of China for the same purpose? There have definitely been many other times in the history of China that would be more or less adoptable for the same role that the Ming dynasty plays in this thesis. However, the decision was made for the fact that it was during the Ming dynasty, as was explained above, that a great many unprecedented financial and economic reforms, or fiscal innovations, took place in China. Hence, it is logical to compare this particular period with the economic and societal reform events that took place during the Eastern Zhou period, and especially during the Warring States period.

To further elaborate my decision to concentrate on the Ming dynasty as the source of the analogical study, I wish to quote what Brook has expressed about the economy of the Ming dynasty in his book, "*The Troubled Empire: China in the Yuan and Ming Dynasties*" (2010). Brook has written the following about the magnitude of the monetization of the Ming Empire:

> "Moving the tax system from the founder's rural model of static communities to an economy of monetized exchange in the sixteenth century was the most important transformation of the Chinese economy prior to industrialization." (Brook 2010, p. 119)

As for now, Ming dynasty will be left aside for a while, for it is imperative to introduce the basic structures of the taxation and labor systems that existed and evolved during the Eastern Zhou period. Later on, those structures will be subjected to an analogical analysis with those of the Ming dynasty. Also, the geographical features of China will be discussed in terms of their impact on general monetization and bolstering of the market economy during the Eastern Zhou period and the Ming dynasty. These are the main topics that are covered in the remaining three chapters of this thesis.

3.1 - The Taxation, Labor and Monetization of the Warring States Period

In China actual taxation systems first appeared during the Spring and Autumn period, that is the first half of the Eastern Zhou period. Before that there had not been any need to create separate taxation systems, as prior to this period there was no such thing as commoners' private ownership of land or private commerce. Instead, in the Western Zhou China the peasantry was divided into groups consisting of eight households that were given a field to cultivate. That field was divided into nine sectors of which eight were divided between the eight households, and the crop they produced belonged to them. The last remaining sector, the ninth one, was cultivated together by the eight households, and its yield was handed out to their lord. It was replaced with new, more complicated taxation systems along with other socioeconomic reforms during the Spring and Autumn and the Warring States periods. (Hsu 1965, p. 108 - 112, 196 - 198; Hsu 1999, p. 576 - 577)

In the Eastern Zhou period the states gathered taxes from their subjects from both the commerce (von Glahn 2016, p. 73) as well as from the annual crop yields (Hsu 1965, p. 108 - 112, 196 - 198; Hsu 1999, p. 576 - 577). The people could be granted a right to own land, in return for which they did not only pay taxes, but also engaged in annual corvées (both men and women) and partook in conscript armies (only men) (von Glahn 2016, p. 81; Hsu 1999, p. 573; Hsu 2012, p. 105; Hui 2005, p. 60, 180; Lewis 1999, p. 598, 621). Eventually, during the Warring States period, hired labor force was used for various tasks as an addition to the corvée (and convict) laborers' work, for tasks that required specialization, and also in consumer goods manufacturing. Differences in these practices existed between the states. (von Glahn 2016, p. 71 - 72)

As was already mentioned before, along with the span of the Spring and Autumn and the Warring States periods the states' armies grew in size, which meant that more and more conscripts had to be drafted - most often from the rural population (Chu 1999, p. 573; Lewis 1999, p. 598). Instead, during the Western Zhou period and the early Spring and Autumn period the backbone of the armies had been the chariot-riding nobility and the foot soldiers summoned from among

the rural populations, (Lewis 1990, p. 54 - 55; Lewis 1999, p. 621) but such armies were much smaller in size (Pines 2012, p. 15; Sanderson 2018, p. 211).

The Warring States period saw an increasing amount of interstate competition in the forms of military campaigns of conquest and political scheming. During the Spring and Autumn period an abundance of similar happenings had already been witnessed, but they escalated even more during the Warring States period (Pines 2012, p. 15; Sanderson 2018, p. 211 - 212). Taxing and submitting people to the corvée and military obligations were necessary as wars were fought frequently and the states had to build and keep up larger armies and defense structures in order to survive (Hsu 1965; Hsu 1999, p. 582; Hui 2005, p. 171, 226; Li 2000, p. 26 - 28). However, despite the existence of various moneys and coins, the taxes were still mainly paid in kind, and/or in military and labor services to the state (von Glahn 2016, p. 44 - 100; Hsu 1965, p. 107 - 139; Hsu 2012, p. 105).

The two aforementioned periods also witnessed a drastic change in the technology and tactics of war. During the Eastern Zhou period weapons and military gear made of iron were gradually adopted into the warfare - partially replacing the bronze armaments that were used earlier - which in turn had its own effects on the warfare. (von Glahn 2016, p. 46, 60; Kakinuma 2014, p. 107, 118) One of the most influential new advancements was the crossbow with a bronze trigger mechanism (Loades 2018, p. 7; Smith 2008, p. 12 - 13). The crossbow, invented by the Chinese around 7th century B.C., was a devastating weapon that had an important role in the armies due to its long firing range, rapid rate of fire, and the efficiency in penetrating armors (Sahay 2016). It is also said that the "noble code of honor" no longer applied in the Warring States period and hence warfare became more brutal and ruthless. As was mentioned before, while during the Western Zhou period and early Spring and Autumn period the chariot warfare had been the main form of warfare, which was fought mainly on a flat and open terrain between the rivaling nobles, the Warring States period armies had shifted from relatively small chariot-riding armies to the massive conscript armies that resulted in an amount of lost lives unforeseen in the Chinese history. Organizing and keeping up such huge army forces required not only huge amounts of investment in terms of human labor but also in monetary economic terms. The states had no option but to adopt their society and economies to the changing

times if they were to have any chances of survival. (von Glahn 2016, p. 72 - 81; Hsu 1965; Hui 2005; Li 2000, p. 26 - 28; Peng 2000, p. 175, 236 - 237)

The increased size of the still existing states (seven dominant states by the beginning of the Warring States) required a larger amount of transportation networks between the cities and different locations within the state. The road and river networks were vital not only for the mobility of trade, (Chu 1999, p. 582; Peng 2000, p. 230 - 234) but also such locations as mines, croplands and garrisons, which were vital for the existence of the states, required a decent road and river network that connected them with the cities. As the states wished to attract peasants into unsettled lands, (Peng 2000, p. 245 - 246) also these areas would eventually require transportation networks in order to become connected with the rest of the state.

An interesting aspect that arose along with the Eastern Zhou economic reforms is the rather strict division of the different specialized production sectors that existed between the cities and the countryside. During the Eastern Zhou period, a multitude of new cities were built and the already existing ones grew in size, and they were the central places of industrial goods manufacturing during the Warring States period, and they also provided the country folks with such goods (von Glahn 2016, p. 66 - 74). As the population of the cities grew, (Chu 1999, p. 582) the burden of keeping the urbanites fed rested more and more on the shoulders of the peasantry. If it was not for the peasants, the cities could not have survived, which would have, in turn, brought about a downfall of local economies within the state. That would have, as a consequence, reduced the amounts of tax revenues that the state could have amassed from the cities and the countryside. That would likely have dictated the demise of the state's military power, as well. (Kakinuma 2014, p. 90 - 91) In addition to the population of the cities, the armies became larger. With the size of the armies, the amount of craftsmen that produced the soldiers' supplies became larger. Both of these changes dictated that the peasants had to produce more and more food to keep the armies and craftsmen fed. (Peng 2000, p. 237)

Another important aspect is that the larger the state the longer its borderlines are. Consequently, more soldiers are needed in order to keep the border areas safe. Significant amounts of soldiers were also needed in order to keep the states' road and river network safe, to protect the cities and other

infrastructure from banditry, and to dump down any attempts of revolt. It is not only soldiers that are needed in order for the expanding state to work successfully. Common farmers, merchants, handicraftsmen, and people of many other trades were needed for the state to be able to maintain its economic cohesion and keep its people - not to mention the large armies - fed, housed, clothed, and last but not least, content enough with their lives so that they would be willing and healthy enough to perform their tasks that were necessary for the continuation of the inflow of tax incomes to the state's coffers which, in their turn, were vital for the affluence and survival of the state as a whole. (Hui 2005, p. 171, 226; Peng 2000, p. 236 - 237)

The states, despite sometimes being allies and at other times being enemies, practiced interstate trade, which benefited them mutually (von Glahn 2016, p. 60 - 66). Each of the surviving states of the Warring States period had both local industry and resources, but it is obvious that in such a vast area that the remaining states covered, there were area-specific resources and know-how that exceeded those of the other states. In the harsh competition for survival and lust for conquest that very well characterizes the Warring States period, it is evident that, whether or not the rulers and the nobility liked it, the states were more or less dependent upon the interstate trade. This applies especially in terms of minerals and natural resources. (ibid., p. 64 - 65; Kakinuma 2014, p. 110, 114) If the state was to obtain these materials, it needed to make itself attractive to the interstate merchants. All in all, merchants were necessary for the states' survival as they were one of the key components in increasing and upholding trade and commerce. As the trade and commerce were taxed by the state, the merchants were also important in terms of the states' tax revenues. (von Glahn 2016, p. 73)

How does monetization affect the aforementioned economic factors? How is it related to the affluence of the local economies? Moreover, how is it related to the fluency of the trade and commerce in general? As was described in Chapter 1.3, bartering is much less efficient and requires more effort that using currencies. Hence, due to its more universal functions as means of exchange, actual currencies were better suited for the commercial purposes. (Davies 2002, p. 13 - 18) This was understood during the Spring and Autumn and the Warring States periods when the monetary economy expanded exponentially. For instance, the amount of the spade moneys in circulation during the Warring States period

amounted to about 10 times of that during the Spring and Autumn period (Goetzmann 2016, p. 158 - 159). Monetization was important, for as has been stated before in this research, the four interlinked reforms, namely, the monetization, the rise of the local area market economies, the new taxation system, and the enlarged armies that rose during the Eastern Zhou period formed an entity that was greatly significant in terms of the states' survival.

Finally, the purpose of introducing the taxation and labor systems of the Eastern Zhou period is in an important position in backing up my argument on the functions of the round coinage. It is reasonable to take into consideration the possibility that the relatively light weight, small size, and lesser value of the round coinage were necessary properties in order to have an adequate currency for small commercial exchanges. It was important in terms of making it possible for the commercial activities of the local level economies to function more fluently on a daily basis. Consequently, that enabled the local communities and families to become more affluent and less dependent on the resource-consuming control and support of the state administration. In other words, I argue the round coins were essential in keeping the local monetary economy running. Moreover, a properly functioning market economy relied on the circulation of currencies while the local economies relied on the properly functioning market economy. The success of the local economy, in its turn, was important in terms of creating economic wellbeing to the local communities and families. More importantly, the people's economic affluence granted the state with possibilities to gather tax revenues while the tax revenues were, in their turn, important in terms of maintaining the states' military strength.

My argument can be expressed in one more, a rather simplified way. I argue that if it was not for the light weight, small size, and lesser value of the coinage, the monetization of the local economies would not have succeeded, and thus the amount of local wealth would have decreased, and that would have resulted in decreased amounts of tax revenues that the state could have collected from its subjects. Hence, the power of the armies would have decreased, for their upkeep relied on the tax revenues that were collected from the subjects of the state. In the bloody world of conquest that the Spring and Autumn and the Warring States periods represented, any state would not have lasted long without a proper army.

The relevance of the physical properties of the Eastern Zhou currencies in terms of this thesis' research subject is discussed further in Chapter 3.3. Next, in Chapter 3.2, the Ming dynasty's monetary economic aspects are discussed and enabled into the analogical analysis with the Eastern Zhou period.

3.2 - The Ming Dynasty's Economic Reforms

The economies, politics, and the way that the people hailing from the different social and economic statuses have lead their lives in the states and empires of China have all gone through many changes over the course of the long history of China, (Brook 2010; von Glahn 2016; Loewe & Shaughnessy 1999; Scheidel 2009; Leonard & Theobald 2015; TCHC book series; Yang 1970) and many of them happened already prior to the beginning of the Zhou dynasty (Liu & Chen 2012; Shelach-Lavi 2015). However, especially by studying the unprecedentedly large-scale monetization and economic changes that took place during the Ming dynasty, it is possible to understand why the states of the Eastern Zhou period went through the process of monetization and other ecopolitical changes, which eventual led to the adoption of the round coinage into their monetary economic systems.

It is reasonable to begin delving into the issue by discussing more about the Ming dynasty's monetary economic reforms. It is known that the taxes were collected mainly in grain prior to the implementation of the Single Whip Reform, which had an impact on many of the empire's economic and social entities. First of all, collecting taxes in grain employed the farmers to cultivate their lands to near maximum capacity. Changing the payment method of taxes into currencies instead of in kind reduced these burdens. However, the most notable reason for the implementation of the tax reform was that the areas with less arable lands relied on governmental subsidies in terms of being provided with grain supplies. It was excessively toilsome and expensive for the government to

haul grain into these locations that were situated far away from the fertile areas of the empire. These efforts also required the building and constant repairing of the costly and labor-intensive transportation networks, such as the Grand Canal (大運河). The problem was solved by collecting the tax revenues in currencies, for they could be used to bolster the local economies. This, in its turn, made the less arable regions more self-sustained in terms of acquiring the basic necessities. The new taxation system also enabled that the grain could be kept stored in the place or province where it was cultivated, whence it could be transport into different areas when a need for redistribution had arisen. (Brook 2010, p. 108 - 109; Chan 2007, p. 249 - 250)

The situation that was described above was essentially the case also during the Spring and Autumn and the Warring States periods, for also then the promotion of money and market economy was prompted by the need to amass resources and tax revenues from across the ever growing states and traveling distances (von Glahn 2016, p. 46, 62). The inception of coinage made it much easier for the rulers to gather revenues from their subjects (Scarre & Fagan 2016, p. 353). Although, during the Ming dynasty the society shifted even more rapidly and drastically than during the Warring States period from paying things in kind into using metal currencies, namely, the bronze coins and silver ingots. The change applied to both everyday commerce and tax payments (Brook 2010, p. 120). One more difference is that the Eastern Zhou period currencies probably had no fixed parities, (Kakinuma 2014, p. 95 - 98, 109) while during the Ming dynasty the silver and bronze currencies were easily interchangeable, and followed fluctuating exchange ratios (Atwell 1998, p. 400 - 416; Kuroda 2005, p. 75 - 76).

During the Warring States period, bronze currencies formed a part of the officials' salaries. However, the largest portion of the salaries still consisted of grain. (Peng 2000, p. 171) It is also possible that round coinage may have been used to pay mercenaries' salaries already during the Warring States period (Kakinuma 2014, p. 94). Using bronze currencies as means of paying salary instead of grain was convenient. As one can imagine, grain spoils over time and its value fluctuates according to its availability that depends on the weather and time of year. The bronze currencies, instead, were steadier in terms of value, and

hence functioned as store of value (Kakinuma 2014, p. 94, 106; Peng 2000, p. 174 - 175).

In addition to that, it is also necessary to repeat here that silver was rarely used as a form of currency during the Warring States period, (Kakinuma 2014, p. 88) despite the fact that small amounts of silver ingots had been manufactured from the Spring and Autumn period onwards (Scheidel 2009, p. 169; Yao & Wang 2003, p. 22). However, as during the Eastern Zhou period there existed many commodity currencies (most notably grain), I argue that in relative value they were essentially the equivalent of the Ming Empire's bronze coins while the Eastern Zhou period's bronze currencies were an equivalent of the Ming's silver ingots.

I believe that during the Eastern Zhou period paying salaries partially in bronze currencies instead of being paid wholly in grain is related to the

Map 3: Map of Ming dynasty China, courier routes, and traveling durations in days from Beijing. (Brook 2010, p. 32)

categorization that set the bronze moneys, coins, and various commodity currencies into different monetary economic levels according to their functions and value as currencies. And if my argument is correct, this was manifested during the Eastern Zhou period by the bronze currencies being an equivalent of the Ming's silver ingots as opposed to the grain that had a lesser value, and hence was an equivalent of the Ming's bronze coins - as was argued above. As for the grain, it is known that its price fluctuations were regulated during the Warring States period in order to benefit both the grain production and distribution (Nolan 2008, p. 159; Peng 2000, p. 214 - 217, 239 - 249). However, there is relatively little information available to tell how much the grain cost on average in bronze currencies during the Eastern Zhou period, and the available information is hard to be construed properly or without ambiguities (Peng 2000, p. 180 - 183). It is clear, nevertheless, that the grain production became commercialized during the Eastern Zhou period, and its value was measured also in actual currencies (ibid., p. 180 - 183, 214 - 217, 236, 241 - 242).

In spite of the scarcity of knowledge over the average grain-bronze exchange ratio during the Warring States period, I argue that paying entirely in grain would have meant that the grain would later need to be exchanged into other currencies. Since silk, hemp and grain were not used for large purchases, and bronze was used for those purposes, it was reasonable to pay salaries partly in bronze currencies instead of paying them wholly in grain (Kakinuma 2014, p. 95 - 98, 109; Wilkinson 2013, p. 565). Given that bronze currencies were in large-scale use during the Warring States period and that they stored value better than the grain, it only made it more reasonable to pay parts of the salaries in bronze currencies.

Paying parts of the salaries in bronze currencies also saved transportation costs. The reduced amount of grain needed for paying salaries meant that there was less hauling of large amounts of grain that requires much manpower. And as was the case during the Ming dynasty, the states of the Warring States period practices famine relief by redistributing the grain that they had collected into granaries, in which case it would not have made much sense to carry the grain very far from the place of its origin. The partial replacement of the practice to pay taxes in grain may have helped in accumulating some of the grain into the local granaries, from where it could be distributed into the areas in need

of relief. (Brook 2010, p. 108 - 109; von Glahn 2016, p. 98; Hsu 1965, p. 91; Hui 2005, p. 171). I believe that storing relief grain was a useful practice to the states of the Warring States period. After all, it was in the governments' interests to keep their subjects alive as they formed the backbone of the states' market economies and armies.

Using bronze currencies also bolstered the efficiency and affluence of the local economies that existed within the states of the Warring States period. This fact had been well noted during the Ming dynasty, as well (Brook 2010, p. 108 - 109; Chan 2007, p. 249 - 250). Therefore, also from the economic point of view, it was very reasonable that parts of the salaries were paid in bronze currencies during the Warring States period, as well. And as has been explained earlier in this research, the local economies were important in terms of the survival of the states. Therefore, bolstering their affluence and productivity was also an important aspect during the Warring States period.

What happened during the Ming dynasty in terms of adoption of different currency types seems to be quite the same with what only began to take shape during the Warring States period. During the Ming dynasty there were silver ingots - called *yuanbao* (元寶) - in circulation that were used for large transactions, while the typical bronze coinage - *tongbao* (通寶) - was used as a small currency for cheaper payments. In the Ming dynasty's case the problem was that the typical coinage was adequate only for daily purposes while larger purchases and transactions were not easy to carry out using only small coinage. Therefore, more valuable currency was required. In the case of the Ming Empire, the solution was to use silver to fulfill this requirement. (Brook 2010, p. 120)

As has been explained already earlier in this research, the monetization of China started in large-scale during the Eastern Zhou period. However, the change was even more drastic during the Ming dynasty, as the empire went through the increased industrial commercialization and monetization of unforeseen scale in the history of China. Silver and copper currencies were used widely by the people from every walk of life (Shan 2015, p. 236 - 238). This change happened for a large part due to the Chinese access to the South American and Japanese silver. There was a great demand for the silver in the Chinese market. Likewise, there was a demand for the Chinese goods in the Middle and South

American markets. The city of Manila in the Philippines functioned as the hub of international trade between the Old and the New World. This intercontinental trade paved way for the establishment of the silver ingots as a form of currency in the Ming China. As the largest portion of silver was an import material in China, it retained its high value and hence was adequate to function as a currency of higher value. Silver functioned as a currency alongside the bronze coinage that functioned as a currency of lesser value.

What does the aforementioned have to do with the situation during the Warring States period? My argument is that the adoption of round coinage into the Warring States period states' monetary economic systems was for the fact that there was a necessity to adopt a form of currency with a value small enough to be useful for the people's daily commercial purposes. The Ming bronze coins had the aforementioned function. In other words, I argue that in order for the Ming Empire's and the Warring States period monetary economies to have functioned smoothly and effective, it was necessary for the governments to adopt multiple money types with different values into circulation. In the case of the Warring States period, this was fulfilled with multiple bronze currencies of different value together with the various commodity moneys. During the Ming dynasty, two main types of currency existed, namely, the bronze coins and the silver *yuanbao*. Beginning from the fulfillment of the Single Whip Reform, the monetization of the empire as well as the importance of silver as the most prominent material of the Ming currencies became cemented. In both instances, that of the Ming Empire and the Warring States period, circulating currencies of lesser and greater value played a key role.

To get back to the physical size of the money, it has been explained earlier in this research, in Chapter 1.2, that the size and weight of the bronze currencies diminished towards the end of the Eastern Zhou period. It seems that the physical size of the currencies in circulation was a case for concern to the people in power as well as to the commoners during the Eastern Zhou period. There exists literary evidence that some officials objected casting large currencies, and found smaller currencies more favorable to the people. It was not contested, however, that both the larger and smaller currencies were necessary for in maintaining a proper monetary balance, and hence neither should be removed entirely from the circulation. (Brooks & Brooks 2015, p. 44; Peng 2000, p. 5;

Wang 1951, p. 81) I believe that this had to do with the different currencies' practicality in different situations, as I have already argued earlier. I will elaborate my argument more in the light of the Ming dynasty's monetization and currencies.

The drastic expansion of the monetization that took place during the Ming dynasty was partly due to the enormous traveling distances within the empire. (See **Map 3** on page 76 for the map of the Ming Empire and the traveling durations within the empire). I argue that the great distances were probably one of the main reasons for the monetization of the Warring States period China, as well (von Glahn 2016, p. 46, 62). It is also noteworthy that during the early Ming dynasty there existed inconvertible paper cash bills, yet they proved to be useless due to the hyperinflation they faced. Due to the scarcity of bronze currencies, things were mainly paid in kind. This was changed as a consequence of adopting silver into the Ming's monetary system. (ibid., p. 307) This can further attest to the importance of the metal currencies to the monetary and market economies.

Furthermore, I argue that if the size or weight of the currency was too large in comparison with its value, it would not have been reasonable to carry that money type over long distances - be it during the Eastern Zhou period or the Ming dynasty. Therefore, during the Eastern Zhou, and even more so during the Warring States period, there was a shift away from using the commodity moneys. The bronze currencies were used more and more in their stead. Similar shift was seen in the Ming Empire when the silver ingot currencies were ushered to work alongside the bronze currencies. On the other hand, due to their lesser value, carrying them around over long distances would have been cumbersome, hence silver was better suited for travels (Heijdra 1998, p. 455 - 456; Kuroda 2005, p. 75 - 76; Shan 2015, p. 236, 239). The above-mentioned takes the discussion back to my earlier argument that as was the case with the Ming bronze coins, likewise were the round coins of the Warring States period suited best for the local and daily purchases. Moreover, I believe that some of the larger bronze currencies probably had the same function as the Ming silver ingots.

However, some Warring States period bronze currencies were probably an exception to this trend. As was explained in Chapter 2.2 of this research, the large Qi knife moneys as well as the round coins had a domestic area of circulation, while the smaller knife moneys were used for international purposes (Li 2000, p. 17 - 18, 20, 22, 44 - 48, 72). It seems, therefore, that the

physically largest currency was not necessarily the primary currency for international purposes. I believe that this may be due to the largest knife money of Qi having been in general too valuable to perform fluently for the functions of international trade, or perhaps the state had for some reason forbidden their use in foreign trade. In spite of the aforementioned uncertainties and ambiguities, the round coins of the Warring States period seem to have been used almost exclusively only within the domestic markets (Kakinuma 2014, p. 110 - 111) and played an important role in local economies.

The difference between the Ming Empire's bronze coins and silver ingots can be easily understood by observing the exchange ratio between the bronze coins and the silver ingots. The exchange ratio between the years 1478 and 1576 varied between 300 and 7000 coins per 1 tael - *liang* (兩) - of silver (about 37.5 grams). The ratio fluctuated between 450 and 3000 coins per 1 tael of silver between the years 1577 and 1643. The ratio depended much on the type and quality of the coin, as many different coin types were in circulation concurrently. (von Glahn 1996, p. 11, 103, 106 - 109) The Ming Empire's monetary economic stability was shaken as more and more silver was imported to China. Between the years 1568 and 1644 the silver-gold minerals' exchange ratio changed from 6:1 to between 10:1 and 13:1 (also gold functioned as a currency during the Ming, yet the silver and bronze currencies were the most prominent ones). Similar trend was witnessed in the silver-copper mineral's exchange ratio between the year 1577 and the 1620's when the ratio changed from 1:229 to about 1:112. This disturbance in ratios was also due to the fact that the empire had problems in producing enough bronze coins, and hence the expanding and industrializing Ming monetary economy largely depended on the silver imports. (Atwell 1998, p. 400 - 416)

I believe that the Warring Stated period round coins' domestic area of circulation may have a relationship with its exchange ratio with the other currencies. I argue that the round coins of the Warring States period were currencies of lesser value than the knife and spade moneys. While the large size of the spade or knife money did not necessarily mean that it was used for international purposes, the amount of copper used for them, as I have explained in Chapter 1, probably meant that it had more value. And as the round coins were generally much smaller, or at most the same size as the smallest of the knife and spade moneys, I argue that the round coins had a smaller value than the knife and

spade moneys. Therefore, it was not reasonable to carry them over long distances, as would have been necessary if they were to be used in foreign trade.

I argue that as the round coins were likely of lesser value, and thus needed in large quantities, their round shape was handy when it came to storing and transporting them, as well as in placing them into stacks of multiple coins. There exists evidence of the coins being placed into stacks containing even as many as 1000 coins (Scheidel 2009, p. 142; Wilkinson 2013, p. 566). I have also argued, in Chapter 2.2, that it is possibly that the lesser value as well as the importance of the round coins is also attested in that they are often very numerous, and sometimes even the most numerous of all the currencies that are found within the same archaeological context of the Warring States period.

As has been explained in Chapters 1.3 and 1.4, in order for the value of the currency not to decrease too much as its physical size decreased, the states sometimes regulated the value of the currencies as well as prohibited people from discriminating between the moneys or coins within the same currency. It seems very likely to me that the states had to find a proportionate size-value ratio in terms of reducing the size and copper contents of their bronze currencies. I argue that the diminishment of the Warring States periods' myriad of commodity moneys in favor of the bronze currencies emergence has a lot to do with finding a proportionate value-size measure. The outcome of this trend can be witnessed already by the advent of the Qin dynasty when *banliang* had taken the role of most of the currencies that were still in use during the Warring States period. During the Qin dynasty coins were regarded as lower currency while gold was regarded as upper currency, but pearls, jade, cowries, tortoise shells, tin and silver were deemed only as valuable items, not currencies (Peng 2000, p. 212 - 213; Yulu 2014, p. 6). In spite of the above-mentioned shifts in attitude, in some locations the people were still accustomed to using cloth and grain as forms of currency as late as during the Ming dynasty (von Glahn 1996, p. 102). During the Ming things were paid in kind during the times when the empire had failed to keep up a functional monetary system (von Glahn 2016, p. 307).

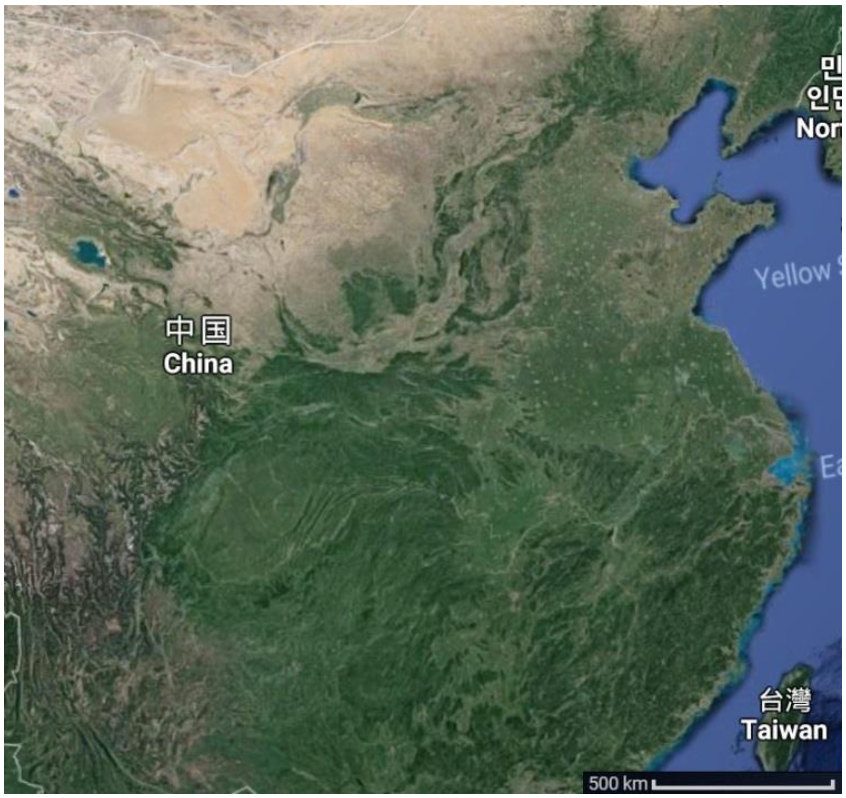
The following chapter, however, will not concentrate any further into these factors, but delves deeper into the geographical features and distances that affected the lives of the people and the governing of the states during the Eastern Zhou period and the Ming dynasty. The geography of China is full of

extremes, and these have had their effects on the industry, agriculture as well as the economy of China throughout history. The next chapter concentrates on explaining how and why the monetary economics and the vast and diverse geographical features and distances were closely interrelated during the Eastern Zhou period and the Ming dynasty of China, and analyzes the similarities that existed between the two aforementioned eras in those terms.

3.3 - The Varying Geography and Climate of the Seven Warring States

One important factor as to why the Warring States period states began to shift away from the feudal state structure and the barter-centered trade structures into a more individual freedom permitting and relatively monetized structures is literally related to the "natural reasons". That is to say that the states differed from one another in terms of their geography and climate, and that had an effect on the states' political and economic decisions. It is evident that during the Ming dynasty there existed a causal relationship between the location of the capital city (in the case of Ming it was Beijing) as well as many other important and strategic locations (such as the cities and military outposts), and the monetization of the Ming society (Brook 2010, p. 108 - 109). I argue that the situation was similar during the Warring States period. In order for one to acknowledge this, it is necessary to introduce some of the basic features of the geography and climate of China.

The contemporary China has a greatly diverse range of different climates and landscapes. (See **Map 4** on page 84 for a satellite image taken of the contemporary China, and compare that with **Map 1** and **Map 2** on pages 5 and 60). There are deserts, jungles, prairies, mountains, montane glaciers, deciduous forests, and a whole variety of other environments. The climate extends from cold and temperate to hot and tropical, and everything in between. China is also one of the most biome-rich countries on Earth, which has in many ways created plenty of



Map 4: Satellite image of the contemporary China (contains only parts of the middle and eastern regions).
(< https://www.google.fi/maps > - copied and edited on March 11th, 2018)

challenges and issues to be met with, but it has also bestowed the Chinese people with a plentitude of natural resources. (Tuan 2008)

The seven largest and most dominant states of the Warring States period did not spread as far north, south, nor west as China does today. However, it is not veracious to say that the area they covered was small in size. Instead, the area was vast, and within it there were a wide variety of environmental and geographical features. Also the climatic features of the Warring States period China were diverse. The climate in the states along the eastern coastline was moist temperate in north and semi-moist/moist subtropical in south. The climate of the northeastern states was semi-moist temperate while the states that were located in the western inlands had a dry and warm temperate climate. There were also plenty of mountainous regions in the southern and the western regions, and their climates often differed from those of the lowlands. As many states were huge, the climate and geography could vary greatly within just a single state, not to mention

between the different states. (Tuan 2008; Kakinuma 2014, p. 100, 107, 120; Keightley 1999, p. 35 - 36; Liu 2013, p. 113; Shelach-Lavi 2015, p. 7 - 18)

As was the situation already during the prehistoric times of China, (Liu & Chen 2012, p. 22 - 41) the natural resources have not been available in equal quantities within the different climatological and geographical regions. Therefore, also none of the states of the Eastern Zhou period was entirely self-sufficient in terms of having the necessary natural resources, not to mention the copper that was used for many important items such as weapons, armors, moneys and coins. Hence, there existed interregional transportation and trade in resources. (von Glahn 2016, p. 60 - 66; Kakinuma 2014, p. 100, 107, 110, 114, 120) Unfortunately, due to wars, banditry and disunion of the Zhou Empire, the interstate mobility of the people and hence the amount of goods' mobility decreased during the Spring and Autumn period from that of the Western Zhou period. During the Warring States period the mobility of the people, and thus the amount of interstate trade increased again as the number of competing states diminished and the remaining ones grew in size and gained more control over the trade routes (Kakinuma 2014, p. 100).

The states of the Warring States period were not entirely welcoming to admit the interstate interdependency. The states started to close themselves off from one another again towards the end of the Warring States period (Emura 2011; Kakinuma 2011). This was likely not an easy decision to make for the fact that not any of the states that had an abundance of all natural and human resources. Each region had developed facilities, know-how, and skills on producing certain commodities that not every state could manage. Hence, maintaining a certain level of interstate trade was usually necessary in terms of the state's survival (Kakinuma 2014, p. 104 - 107, 110, 114).

To elaborate the regional and state-level differences a bit further, Hsu has described some of the abundant differences that existed between the states in terms of goods manufacturing and natural resources during the Spring and Autumn period (Hsu 1965, p. 119 - 122). He has written about the topic as follows (names written in Wade-Giles):

> "From Ch'i and Lu, located in Yen and Ch'ing, respectively, came lacquer, silk, silk from wild silkworms, hemp, linen, dyed fabrics, salt, sea food, pine timbers, lead, and odd-looking rocks, presumably for garden decoration. From Hsü, which

> included parts of Sung, Ch'i and Wu, came pearls, fish, musical stones, colored feathers, and fine, dark silk." (Hsu 1965, p. 119 - 120)

Hsu elaborates the topic even further than what has been quoted above. Differences that were similar with the above-mentioned existed between the states during the Warring States period, as well (von Glahn 2016, p. 60 - 66; Hsu 1965, p. 119 - 122; Höllmann 1986, p. 56 - 75; Kakinuma 2014, p. 110, 114).

From the differences in the availability of goods and natural resources it is now time to shift into another geographical factor - the rivers. Throughout the Chinese history the many rivers of China, especially the Yangtze (長江) and the Yellow River (黃河), have played a key role in the transportation of goods as well as in travel. The benefit of water transportation lay in its efficiency and cheap cost in comparison to using land routes. The problem has been that they only flow from west due east. Hence, major waterway building projects, like that of the Grand Canal (大運河) of East China, have taken place. (Brook 2010, p. 110) Hence, the building and maintenance of the Grand Canal works as an excellent example to elaborate the burden that the waterways have placed upon those who had to build them.

Why was the Grand Canal built and maintained? It was done for two primary reasons. First one of them is that it enabled goods and military troops to be transported between the two aforementioned main rivers as well as inside the regions that are situated between them. The second reason had to do with the above-mentioned cheapness of transporting goods by water. (Brook 2010, p. 110; Cech 2010, p. 13; Liu & Chen 2012, p. 26 - 29) As for the requirements of constructing watercourses, the problem is the immense amount of manpower, time, and economic wealth that they take in order to be conducted properly. For instance, during the Yuan dynasty (元朝) (1271 - 1368) the government had to spend large amounts of financial wealth in order to keep the Grand Canal from silting up. Additionally, flooding and warfare sometimes impeded the use of canal. In times when the canal had become impassable, the government resolved to shift the traffic to the coastal maritime routes. In spite of the existence of the alternative routes, in the corvée of the year 1351 some 150.000 people were mustered to drudge at channeling works of the Grand Canal. It was the hardship of this very

corvée that instigated its participants into joining the uprising that eventually spelled the end of the Yuan dynasty. (Brook 2010, p. 110 - 111)

However, the Yuan Empire was not the first one of the Chinese dynasties that fell due to the people's disaffection towards the encumbrances that the government inflicted upon them. One such example is the ephemeral Sui dynasty (隋朝) (581 - 618), during which the first part of the Grand Canal was constructed. It was due to this as well as various other major projects, such as the building of the Great Wall of China (長城), that the dynasty came to its end so soon after its establishment. The Sui Empire's perdition took place once the funds had been undone with the constant squandering into a plethora of grand projects, in addition to which the people revolted due to having grown tired of being pushed to the limits of their capacities (Xiong 2006, p. 29 - 72, 173 - 196).

A failure to retain balance between the people's wellbeing and the burdens that were posed on them became manifested as the downfall of the Qin dynasty, as well (Li 2000, p. 6). The nature of those burdens is especially similar with the ones that the people had to endure during the Warring States period that preceded the Qin dynasty. And regardless of the Sui, Yuan and Ming dynasties being hundreds of years apart from the times of the Warring States period, these eras do have in common the fact that the commoners faced great hardships due to the states' grand construction projects. These labor burdens were made even worse by the frequent wars that were already taking huge amounts of effort from both the state and its people. These burdens were coupled with the necessity to build various defenses, such as walls along the borders of the state. The structures would also need to be reinforced on a frequent basis, and would usually need to be connected to the already existing road or river networks. (von Falkenhausen 2006, p. 411; Hui 2005, p. 59 - 60, 87 - 88, 172; Peng 2000, p. 236 - 237; Pines 2012, p. 15; Sanderson 2018, p. 211 - 212)

It is evident that keeping up a successful state was essentially balancing between using people as manpower yet not burdening them too much. After all, no state could have existed for a long time without its people willing to live within the state, pay taxes, fight in wars, and produce necessities for its other citizens. As was explained before, in order for this to have happened properly, a functioning socio-economical system had to be in place, which takes us back to

the usage of currencies and ultimately the coinage. If it was not for the bronze currencies, as has been explained earlier in this research, the local economies would not have flourished. This would have, in its turn, meant that the local areas would have been more reliant on the state's government to provide them with what the people needed in order to survive. This, in its turn, would have meant not only more expenses to the state, but also that more goods and commodities would have been subjected to long-distance transportation.

I argue that the paucity of self-sustainability of the Warring States period localities would have taken excessive manpower in terms of keeping their people able and available for the state's purposes. The failure to monetize the economy would have required more state-run transportation of goods, and this would have necessitated more state-run managing in terms of transportation of goods, as well as obtaining, repairing and looking after transportation utilities (such as wagons, boats and horses), and also guaranteeing a safe passage along the roads in the form of military presence. What would have made the situation even worse, also the transportation networks would have been subjected to more wearing due to more traveling. This would have meant that the traveling networks would have required more maintenance.

And finally, as was explained in this chapter, the labor force that it took to keep the transportation networks working was toilsome to the subjects of the states and the Empire of Ming. Therefore, in order to reduce the amount of labor that it took to keep the public facilities functioning, and to divert the human resources into creating tax funds as well as into building military structures and fighting in wars, the monetization of local economies was a necessity. This, in its turn, has to do with the adoption of the round coinage, as has been explained earlier in this research. It is also worthwhile noticing that also the adoption of the hired labor (starting from the Spring and Autumn period onwards) and military professionals (starting from the Warring States period onwards) may have eased the corvée laborers' burdens. The emergence of the aforementioned professions during the Eastern Zhou period has been discussed earlier in Chapter 3.

The following chapter, Conclusions, sums up the key points of this research into few pages. At the end, also some ideas are given as to what aspects of the Eastern Zhou period monetization should be studied more in order to expand the knowledge that has been provided in this thesis.

Conclusions

In **Chapter 1**, after introducing some preliminary aspects of Western and Eastern Zhou periods and the Ming dynasty as well as the currencies that were used during those times, it was presented that the general size of the Eastern Zhou period bronze currencies reduced over time. It was shown that the round coins are generally smaller than the other bronze currencies, namely, the spade and knife moneys. It was argued that due to their smaller size the bronze coins comprise of lesser amounts of copper in comparison with the larger bronze currencies, and hence may have had smaller value than the larger bronze currency types. As the round coins had a domestic area of circulation and were probably the least valuable of the bronze currency types. Due to their lesser value, it seems likely that the round coins were minted for the local and daily purposes as opposed to most of the spade and knife moneys that had a greater value than the round coins. Additionally, as prior to the China's monetization things were mainly paid in kind, it seems likely that the bronze coins' convenient size, weight and value were better suited for the daily commerce than the commodity currencies. This is for the reason that commodity currencies were needed in too large quantities in order to be able to serve that purpose. Later on in the thesis this information was added to and compared with the information that is provided in Chapters 2 and 3. At the end of Chapter 1 also Ming dynasty's metal currencies - the bronze coins and the silver ingots - were introduced. They were discussed further in Chapter 3.

In **Chapter 2** it was first focused on the dating of the earliest emergence of the round coinage in China. This was done as to know which parts of the Eastern Zhou's monetary and economic reforms are most relevant to be paid attention to in terms of studying the emergence of the round coinage of China. Contemporary literature was used in defining the dates. It was noted that in the literature there exist various approaches to the topic, and the information they provide is often vague and indefinite. In spite of the lack of definitive information, it was possible to place the date somewhere in the 5^{th} or 4^{th} centuries B.C., which

cover the early and middle Warring States period. After the approximate dating was done, some archaeological materials were observed. They can attest to that the circulation of the round coinage of China was indeed largely confined into the state where they were cast, while most of the knife and spade moneys circulated outside of the state where they had been cast. The archaeological material can also show that even though the round coins and the knife and spade moneys are often found together, the quantity of the round coins is often the largest of all the bronze currencies within archaeological context. It was argued that this can further attest to that the round coins were of lesser value and thus were adequate best suited for daily purposes. And as their shape and size are convenient in terms of handling and storing, that makes them even better for the daily purposes.

In **Chapter 3** the general monetization of China during the Eastern Zhou period was compared with the monetization of the Ming dynasty. The arguments that have been presented in Chapter 3, as well as those that were already presented in Chapters 1 and 2, have been reflected in the light of what happened during the Ming dynasty. The Eastern Zhou period states' transfer away from the feudal system into the monetized market economy was discussed first. In general, the social reform spelled more freedoms to the subjects of the state, which were manifested in the abolition of serfdom, the liberty to engage in private commerce and entrepreneurship, the division of people into various social classes, and the general ability to choose over the course of one's own life. It was stated that these sociopolitical and ecopolitical reforms were necessary to be carried out, for the states' survival in the ever more frequent and larger wars between the states relied on them. It was explained that the ever increasing size of the armies required a shift into the monetized market economy system. This was the case because the new monetary economic system enabled effective redistribution of goods, which in its turn allowed for the local economies an ability to survive more independently. This reduced the amount of state's role in the upkeep of the local communities, which reduced the state's expenses that were ventilated more and more into fighting the wars and building defenses. Furthermore, if the armies and defenses were to be kept functional, an abundance of war funds had to be collected. Those were collected in the form of taxes that were imposed on the agricultural, commercial as well as some other activities of the state's subjects. To

maximize the states' profit and efficiency from the tax collections, the taxes were paid partly in bronze currencies.

As for the monetization of tax collection, due to the relatively unfluctuating value of the bronze currencies, the taxes were collected partly in bronze currencies. The remaining part was collected in grain, but its value was prone to fluctuations. Due to the lesser value of grain, it also required much more efforts and funds in terms of transportation and storing than the bronze currencies. The monetization and especially the bronze currencies also made the local trade between the cities and the countryside fluent, and it was argued that in this local trade the round coins played the key role. It was also argued that if it was not for the existence of the round coins in the local trade, the whole process of buying and selling things would have been less fluent. This is for the reason that the larger and more valuable bronze currencies would have been unhandy for cheap daily purposes, while the commodity moneys would have been needed too many due to their low value. It was argued that the entire local economy would have been less affluent if the round coinage had not existed. This would have led to the failure of the economic monetization of the state. As a consequence of that there would have been more unnecessary expenses to the state as well as lesser amount of available tax revenues. This would have been a major drawback to the state's army, for its upkeep relied on the tax funds. The deterioration of the army could in the worst case have entailed the fall of the state into the hands of its rival states.

The geographical factors as well as the enormous traveling distances have burdened both the states of the Eastern Zhou period and the Ming Empire. The drastic monetization of the Ming Empire is known to have happened partly due to mitigating the expenses and hardships that it took to provide the empire's armies with food and supplies. The monetization enabled that the garrisons and the soldiers could become more self-sustained, thus reducing the empire's goods transportation endeavors. This was reflected in the light of the ever increasing size of the states and their armies during the Spring and Autumn and the Warring States periods. It was also argued that while there existed an exchange ratio between the more valuable silver ingots and the less valuable bronze coins of the Ming dynasty, there probably existed similar exchange ratios between the larger and smaller, or the more and less valuable bronze currencies of the Eastern Zhou period. In addition to that, it is known that the hemp, silk and grain currencies of

the Eastern Zhou period could be exchanged into bronze currencies. During the Ming dynasty the bronze coins functioned as means for daily purposes. It was argued that the round coins of the Warring States period had a similar purpose. The argument was grounded with the fact that the Warring States round coins only circulated domestically.

In the light of the aforementioned findings, I have argued that the round coins of the Warring States period were adopted into the states' monetized market economies to facilitate the people's performance of the daily commerce. I also argued that the role that the round coins played in granting fluency to the functions of the local markets also affected the entire society, and this is probably the reason why the round coins emerged into circulation in almost every state of the Warring States period. However, more research has to be conducted in order for a better picture to be formed over the topic. Additionally, different states' monetary economic entities have to be scrutinized separately as to find both analogies and anomalies between them. It is also reasonable to take into consideration the possibility that the usage of the state of Chu's uniquely shaped small bronze currencies could shed new information as to the usage and importance of the round coinage of the Warring States period.

On April 7th, 2018 in Korso, Vantaa, Finland

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Photographs, Drawings and Maps:

Cover Picture (coin of Qi state):

< https://www.numisbids.com/n.php?p=lot&sid=2325&lot=1706 > - copied and edited on March 12th, 2018. Original photograph found at numisbids.com under lot reference 1706 in the category "China - Ancient". Auctioned by Stephen Album Rare Coins in Auction 30 on January 18th - 20th, 2018. Text added by Vilén J. K. on March 12th, 2018.

Map 1 (page 5):

Glahn, (von), R. 2016. *The Economic History of China: From Antiquity to the Nineteenth Century*. Cambridge University Press, University Printing House, Cambridge, UK.

Map 2 (page 60):

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Map 3 (page 76):

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Map 4 (page 84):

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Picture 1 (page 10):

< http://www.chinasage.info/imgs/MixedCoins.jpg > -

copied and edited on February 10th, 2016. Photograph by David Hartill.

Picture 2 (page 13):

1) Cowry shells:

< http://hua.umf.maine.edu/China/Xian/Shaanxi_History/pages/093_History_Museum.html > -

copied and edited on April 6th, 2018. Copyright by Marilyn Shea (2005).

2) Ring moneys:

< https://auction.catawiki.com/kavels/15491127-china-lot-consisting-of-16x-pseudo-money-cowries-money-ring-money-shieldmoney-et-al-zhou-dynasty-c-1122-b-c-256-b-c-specifically-the-warring-states-period-and-earlier-7x > -

copied and edited on April 6th, 2018. Original photograph found at catawiki.com under the lot reference 15491127, auctioned in 2017 by Leo en Jose Mommers van Santvoors.

3) Gold Block:

< http://english.chnmus.net/fortnightselection/node_6893.htm > -

copied and edited on April 6th, 2018. Original photograph found under the title "Ying Yuan Gold Currency" at the Henan Museum's website. The item is owned by the Henan Museum, PRC.

4) Ant-nose / ghost-face moneys:

< https://www.numisbids.com/n.php?p=lot&sid=2009&lot=10 > -

copied and edited on April 6th, 2018. Original photograph found at numisbids.com under the lot reference 10 in the category "Chinese coins". Auctioned by Myntauktioner i Sverige AB in Auction 23 on May 20th, 2017.

5) Various currencies:

< https://auction.catawiki.com/kavels/5952893-antique-orient-china-lot-of-10-various-pseudo-coins-from-various-materials-shang-zhou-ordos-1766-550-bc > -

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Picture 3 (page 25):

Drawings from Hartill, D. 2005. *Cast Chinese Coins: A Historical Catalogue*. Trafford Publishing Ltd., Cheshire, UK. Photograph with a yellow ruler by Vilén, J. K., taken on February 10th, 2016.

Picture 4 (page 45):

Photograph by Ding, G. on page 39 in Wu, S. (chief editor) & Yu, L. & Yu, H. 2004. "Chinese Coins: Money in History and Society" in *Arts of China* book

series. Long River Press, PRC.

Picture 5 (page 45):

< http://usa.chinadaily.com.cn/a/201704/13/WS59bb7f9da310d4d9ab7e9026_4.html > -

copied and edited on March 13th, 2018. Photograph by *China Daily* in the article "30,000 sunken relics unearthed in SW China", published on April 13th, 2017.

Picture on page 92 (coin of Qi state):

< https://www.numisbids.com/n.php?p=lot&sid=2325&lot=1705 > -

copied and edited on March 25th, 2018. Original photograph found at numisbids.com under the lot reference 1705 in the category "China - Ancient". Auctioned by Stephen Album Rare Coins in Auction 30 on January 18 - 20th, 2018. Text added by Vilén J. K. on March 12th, 2018.

Online Collections:

MyMinifactory's 3D-printed items online collection:

< https://www.myminifactory.com/object/3d-print-hollow-handled-spade-money-1a-at-the-british-museum-london-16371 > -

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The Yale University Art Gallery's online collection:

< https://artgallery.yale.edu/collections/objects/215447 > -

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< http://www.britishmuseum.org/research/collection_online/search.aspx > -

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